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OCEANIC GAMEFISH/SKYLAB PROJECT

FIELD OPERATING PLAN

FOR

OPERATIONS 4, 5 AUGUST

27 July 1973

(NASA-CR-136032) OCEANIC GAMEFISH/SKYLAB
PROJECT FIELD OPERATING PLAN FOR
OPERATIONS 4, 5 AUGUST (National Marine
Fisheries Service, Bay) ~~459~~ p HC \$10.00

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OCEANIC GAMEFISH/SKYLAB PROJECT

FIELD OPERATING PLAN

FOR

OPERATIONS 4, 5 AUGUST

27 July 1973

TABLE OF CONTENTS

<u>TITLE</u>	<u>PAGE</u>
GENERAL SITUATION	1
PLANS A, B, C, D	1
TOURNAMENT	1
INFORMATION CENTERS	2
GAMEFISH SAMPLERS	3
SEA TRUTH OBSERVATIONS	3
COMMUNICATIONS	3
PERSONNEL	4
COMMAND POST	4
APPENDIX A - <u>PLAN A</u> : SURFACE MEASUREMENTS	A-1
- <u>PLAN A</u> : AERIAL OBSERVATIONS	A-11
APPENDIX B - <u>PLAN B</u> : SURFACE MEASUREMENTS	B-1
- <u>PLAN B</u> : AERIAL OBSERVATIONS	B-11
APPENDIX C - <u>PLAN C</u> : SURFACE MEASUREMENTS	C-1
- <u>PLAN C</u> : AERIAL OBSERVATIONS	C-9
APPENDIX D - <u>PLAN D</u> : SURFACE MEASUREMENTS	D-1
- <u>PLAN D</u> : AERIAL OBSERVATIONS	D-9
APPENDIX E - OPERATIONS PLAN FOR R/V OREGON II AND R/V BOWERS	E-1
APPENDIX F - GAMEFISH/OCEANO REQUIREMENTS	F-1
APPENDIX G - MISSION OPERATIONS PLAN	G-1
APPENDIX H - PERSONNEL ASSIGNMENTS	H-1
APPENDIX I - ACCOMMODATIONS	I-1
APPENDIX J - GAMEFISH INFORMATION PACKET	J-1
APPENDIX K - MISCELLANEOUS INFORMATION	K-1
APPENDIX L - NC130B OPERATIONS PLAN	L-1

GENERAL SITUATION

The second field operation for the oceanic Gamefish/Skylab Experiment 240 is scheduled for 4, 5 August.

A gamefish tournament administered by the Pensacola Big Game Fishing Club is planned as part of the operations in order to obtain fish catch data.

Government and contract vessels will collect environmental sea truth data. Concurrent biological and environmental data will be acquired from selected volunteer fishing vessels.

Skylab overpass of the fishing area is scheduled for 5 August at approximately noon and an overflight by an Earth Survey aircraft is also scheduled for 5 August to obtain photography/imagery. A NASA/ERL aircraft will fly transects of the area on 4 and 5 August.

PLANS A, B, C, D

Two sets of surface and aircraft transects have been laid out and defined in ERL operating documents; one set is designated as Plan A (Appendix A) and provides intensive coverage of the area. The other set is Plan B (Appendix B) which shifts the area of coverage seaward. Plan A transects will be used if the water demarcation between "blue and green" lies inshore. Plan B will be selected if the blue water lies farther seaward. It is construed that better gamefishing will occur in "blue" water and that gamefishing boats will head for "blue" water.

The tracks of the NMFS R/V OREGON II and the NMFS R/V BOWERS (Appendix E) have been laid so that the ships may take observations of water color as they approach the area from the Southwest. Selection of Plan A or Plan B depends on the observations radioed to the Destin Information Center via the R/V ERL by the ships at 1800 on 3 August.

The sportsfishermen will fish locations of their choice within the enlarged tournament fishing area. It is assumed that they will seek "blue" water, going no farther offshore than is necessary providing they are over deep water (30 fathoms or greater) for billfishing.

Plans C and D provides for air and surface transects to be run on 6-10 August. They are supplementary to A and B, respectively and will be activated only by management decision in the event Skylab data pass is rescheduled to 10 August.

TOURNAMENT

The tournament committee consists of anglers representing gamefishing clubs in the area; charterboat captains representing the charterboat associations; and a

representative from NMFS Gamefish Program at Panama City. The Pensacola Big Game Fish Club is administering the tournament which entails establishing tournament rules, obtaining entries, procuring trophies and arranging the award ceremony under the general guidance from the tournament committee. NASA/MTF is contracting (in the name of NMFS) for administrative costs on a no-profit basis with the Pensacola Gamefish Club. Announcement packets, each containing a tournament brochure, gamefish data logs, no fee entry form and a map of the fishing area, have been mailed to over 500 anglers and boat captains. The brochure identifies tournament committee members; gives the tournament rules and general information; and invites participation. The entry forms are postage stamped and pre-addressed for delivery to the Pensacola Big Game Fishing Club. In previous field operations, participating gamefishing boats were restricted to fishing for the day in 10 n.mi. squares which were randomly assigned from within the total fishing area. Tournament rules for this activity provide that gamefishing boats may fish any any location within the total area.

The NMFS R/V OREGON II has been designated as the committee boat for the tournament.

INFORMATION CENTERS

Trailers staffed with Government and contract personnel will be established at the following locations to facilitate tournament business and provide a contact point for local anglers.

Pensacola, Rod and Reel Marina

Telephone 904-453-1278
904-453-1279

Destin, East Pass Bridge Rodeo Dock

Telephone 904-837-2523
904-837-2613

Panama City, Captain Anderson's Marina

Telephone 904-234-2726
904-234-2740

Trailer Activation. Trailer setup with electrical connections and telephone will be handled by the MTF technical support contractor. Present schedule on set up is Pensacola and Destin, 18 July; and Panama City, 19 July. After completion of the tournament, the support contractor representative will notify the trailer leasing agency to return trailers as follows: Pensacola and Panama City, 6 August. Destin,

11 August. The support contractor representative will arrange electrical and telephone disconnects on those dates and also make the appropriate notifications that the trailers have been deactivated.

Radio receiver rental and installation as well as makeup and installation of the tournament status board will be accomplished by the technical support contractor.

Functions. Personnel manning the information center will accept additional tournament entries; maintain activity and long distance telephone logs; provide handouts to tournament participants; make necessary contacts and arrangements for oceanography observers to ride gamefishing boats; assist port samplers in collecting catch data by telephone; and act as a contact for local anglers requiring tournament information.

Use of telephones in the trailers will be restricted to matters relating to the project and the tournament.

GAMEFISH SAMPLERS

It is planned to acquire a set of sea truth oceanographic data which is closely associated temporally and spatially with the gamefish catches. To this end, anglers have been queried on the entry forms if they would be willing to embark Government and contractor personnel on their boats. The primary function of such personnel would be to acquire oceanographic data coincident with gamefish catches but on a non-interference basis with the boats' fishing.

Contacts of anglers, boat captains and owners with gamefish samplers will be arranged through the information centers.

Appendix F contains instructions for the use of the sampling kit and contents. Data log forms are included in the kit together with directions for making entries and also, the frequency of observations.

SEA TRUTH OBSERVATIONS

Sea truth environmental observations other than those taken by the gamefish samplers are a responsibility of NASA/ERL. Transects, times, sampling procedures and identification of personnel and boats are given in Appendices A through F.

COMMUNICATIONS

The sportsfishing boats and Government chartered oceanographic boats transmit and receive on either 2638 KHz, VHF channel 16 (emergency).

The OREGON II which is the committee boat for the tournament will monitor 2638 KHz, and VHF channel 16, and relay tournament traffic on these channels as necessary.

The Information Centers will be equipped to monitor 2638 KHz. In addition, the Destin Information Center will be equipped to communicate with the NASA research vessel ERL and the NASA/ERL aircraft as indicated in Appendix G.

PERSONNEL

Appendix H lists Government and contractor personnel associated with field operations functions - information centers, port sampling, gamefish sampling, public relations, management and data support and technical observation.

Personnel accommodations are given in Appendix I.

COMMAND POST

The Command Post will be established on the afternoon of 3 August in the Destin Information Center.

The Principal Investigator and the Technical Monitor may be reached through the Command Post from 3-5 August.

APPENDIX A

PLAN A

- SURFACE MEASUREMENTS
- AERIAL OBSERVATIONS

APPENDIX A

PLAN A

EARTH RESOURCES LABORATORY

MISSION REQUEST

FOR

NINE (9) SEA TRUTH BOATS

WATER SURFACE OBSERVATIONS & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075

SKYLAB EXPERIMENT #240

4, 5 AUGUST 1973 MISSION

EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR

NINE(9) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

1. PROGRAM OR PROJECT: Skylab Experiment #240
2. REQUESTING ORGANIZATION OR INDIVIDUAL:
W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility
3. ERL MISSION NUMBER: 075
4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing for Oceanic Gamefish Assessment and Monitoring
5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.)
4, 5 August 1973

Water observations and measurements will be made one day previous to Skylab overflight and the day of Skylab overflight.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and attach Sea Truth Station Chart.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola, Florida bounded by the coordinates 30°16'N, 86°51'W; 29°18'N, 85°47'W; 29°21'N, 87°56'W and encompasses a total area of approximately 3,200 sq.n.mi. The test site is based on Skylab track No. 62, northwest to southeast.

7. MISSION CONSTRAINTS:
 - A. CLOUD COVER LIMITS: N/A
 - B. sun angle; N/A
 - C. OTHER CONSTRAINTS: (Describe constraints such as tides, atmospheric conditions, surface measurements, coordination, etc.)

All boats should be on "flyover station" at the time of the Skylab overflight. (This time is approximately 1200 CDT) Flyover stations are 39, 41, 43, 46, 49, 55, 60, 63, 67.

8. COMMUNICATIONS REQUIREMENTS:

A. DESIRED METHOD OF INTERESTED PARTIES NOTIFICATION & COORDINATION.

1. Destin will be the central communication headquarters.
2. 6.9825 MHz aircraft to command boat and shore headquarters
3. CB radio-command boat to other boats. Channel TBD.(ERL-27.575 and 1 -20 channels)
4. Marine radio frequency 2638

B. RADIO COMMUNICATIONS REQUIREMENTS:

Radio beacon is to be placed on ship covering station 41, 363 KHz
ID Code NAS (-. .- ... Morse Code)

9. SPECIAL CONSIDERATIONS:

- 9.1 9 sea truth boats will be used in this mission.
- 9.2 Sea truth data will be taken on two days (4, 5 August 1973).
- 9.3 Each boat on flight line is to be equipped with four orange smoke signals. The first smoke signal shall be set off at each boat on signal from command boat, the second four minutes later. Two will be used on each day of the mission.
- 9.4 "THE ERL" will be the Command Boat.
- 9.5 The Sea Truth Station Coordinates:

<u>STA.NO.</u>	<u>BOAT</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
37	6	29°58.0'N	87°21.5'W
38	6	29°52.0'N	87°15.5'W
39	6	29°46.2'N	87°09.5'W
40	6	29°40.3'N	87°03.2'W
41	1	29°34.5'W	86°56.75'W
42	4	29°28.6'N	86°51.0'W
43	4	29°23.5'N	86°45.5'W
52	4	29°24.0'N	86°58.25'W
53	4	29°30.0'N	86°57.5'W
71	4	29°17.5'N	86°59.0'W
57	3	30°07.0'N	86°52.5'W
56	3	29°58.75'N	86°53.75'W
55	3	25°51.0'N	86°54.75'W
54	3	29°42.5'N	86°55.75'W

<u>STA. NO.</u>	<u>BOAT</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
44	2	29°39.5'N	86°17.0'W
45	2	29°38.25'N	86°27.4'W
46	2	29°37.0'N	86°37.0'W
47	2	29°35.5'N	86°47.0'W
51	5	29°29.0'N	87°36.5'W
50	5	29°30.5'N	87°26.5'W
49	5	29°31.7'N	87°16.5'W
48	5	29°32.75'N	87°06.5'W
58	7	29°45.0'N	87°32.5'W
59	7	29°42.5'N	87°23.5'W
60	7	29°39.8'N	87°14.5'W
61	7	29°37.0'N	87°05.5'W
65	8	29°23.0'N	86°20.5'W
64	8	29°26.0'N	86°29.3'W
63	8	29°28.7'N	86°38.5'W
62	8	29°31.5'N	86°47.5'W
70	9	29°45.9'N	86°44.5'W
69	9	29°40.2'N	86°50.7'W
68	9	29°28.3'N	87°03.5'W
67	9	29°22.3'N	87°10.0'W
66	9	29°16.5'N	87°16.5'W

9.6.1 Boat 1, "THE BRL", Station 41
 Arrive at station at 0900 CDT the day before Skylab overflight (4 August 1973) and commence data taking on 1.5 hr. intervals through 1800 CDT. Repeat the operation on 5 August 1973.

9.6.2 Boat 2 station time (CDT)

44	0900
45	1030
46	1200 flyover
47	1330
46	1500
45	1630
44	1800

9.6.3 Boat 3

57	0900
56	1030
55	1200 flyover
54	1330
55	1500
56	1630
57	1800

9.6.4 Boat 4, "Oregon II"
 On August 5, the Oregon II will not make stations 52 at 1630 CDT and 71 at 1800 CDT. The Oregon II will proceed to and remain at station 53 from 1500 to 1700 CDT to unload fish which have been placed on board for storage. At 1700 CDT the Oregon II will depart for Panama City. Remaining fish and samples will be transferred to trailer by NMFS personnel. LEC crew will transport samples from trailer to MTF.

	station	time
	53	0700
	52	0830
	71	1000
	43	1200 flyover
	42	1330
	53	1500
	52	1630
	71	1800
9.6.5 Boat 5	51	0900
	50	1030
	49	1200 flyover
	48	1330
	49	1500
	50	1630
	51	1800
9.6.6 Boat 6	37	0900
	38	1030
	39	1200 flyover
	40	1330
	39	1500
	38	1630
	37	1800
9.6.7 Boat 7	58	0900
	59	1030
	60	1200 flyover
	61	1330
	60	1500
	59	1630
	58	1800
9.6.8 Boat 8, "Kingfisher II"	65	0900
	64	1030
	63	1200 flyover
	62	1330
	63	1500
	64	1630
	65	1800

9.6.9	Boat 9 "Bowers"	70	0700
		69	0830
		68	1030
		67	1200 flyover
		66	1330
		67	1500
		68	1630
		69	1800

Note: On 5 August the "Bowers" will not make station 69 at 1800 but will rendezvous with "The ERL" at station 41 to transfer samples. In case of foul weather, the "Bowers" will proceed to the Pensacola Coast Guard Station.

9.7 On the Skylab overpass day, each boat shall remain at the overpass station until instructed to move on to other stations. This also applies to pre-mission day. **Instructions from R/V ERL on 2638 KHz.**

9.8 Each boat shall have some type of navigation equipment for the exact location of stations. The boats shall be able to position themselves within one-half mile of the sample station. If possible, all boats will be position checked with radar (on Skylab overflight stations) by Boat No. 1.

10. SENSOR REQUIREMENTS:

10.1 Sea Truth Measurements:

10.1.1 All boats except boat 1 (Command Boat) shall take the following data at each station. The data shall be recorded on a measurement log sheet.

10.1.1.1 Sample time to nearest minute.

10.1.1.2 Surface water temperature to nearest tenth °C.

10.1.1.3 Surface water salinity to hundredths of a ppt.

10.1.1.4 Air temperature to nearest tenth °C.

10.1.1.5 Wet and dry bulb psychrometer readings to nearest tenth of a degree.

10.1.1.6 Wind direction, quadrants (ex. N, SE, SSE, etc.)

10.1.1.7 Wind speed to nearest mile.

10.1.1.8 Secchi visibility to nearest foot.

10.1.1.9 Sea state to nearest foot.

10.1.1.10 Water depth if possible to nearest fathom.

- 10.1.1.11 Forel-Ule Color
- 10.1.1.12 Chlorophyll water sample number and volume of sample
- 10.1.1.13 Necessary remarks about condition at sample station such as boats in area, debris, fish sighted, etc. Atmospheric pressure, visibility, cloud % and type, and precipitation to be recorded on sheet
- 10.1.1.14 Boats 2 and 6 will use the ISCO spectroradiometers.
- 10.1.1.15 Take sky picture with Fish Eye camera on Boat 1 at each sampling period.
- 10.1.2 Command boat measurements at Station No. 41
 - 10.1.2.1 Take measurements from 0900 through 1800 4 August 1973. Repeat the operation on 5 August 1973.
 - 10.1.2.2 Take the following measurement every 1½ hours. 10.1.1.1 through 10.1.1.15. This includes 10.1.1.14 if the Isco is placed on "THE ERL".
 - 10.1.2.3 Relative irradiance measurement will be made from Boat 1 at Skylab and aircraft overpass times using red, green, blue filters(depths to be specified later).
- 10.1.3 Each boat shall have literature required for proper description of sea state, wind direction, and cloud description.
- 10.1.4 Use data acquisition techniques reviewed in training session.
- 10.1.5 Each boat will be provided with a chlorophyll filtration system. After filtration the chlorophyll shall be frozen until analysis.
- 10.1.6 Two gallons of sea water will be used for each chlorophyll sample unless chlorophyll concentration is too large, then record amount of sea water filtered.
- 10.1.7 All samples shall be marked as to exact station number, date, time, volume and all other pertinent information.
- 10.1.8 Water temperatures will be taken with Salinometers and with bucket thermometers.
- 10.1.9 RS-5 Salinometers will be used on the "Oregon II" and the "Bowers" for their measurements on 3 August only.
- 10.1.10 Secchi disks will be provided with extra long ropes (150 ft.). Five pound weights will be attached to Secchi Disks.
- 10.1.11 The Salinometer will not be used for salinity except as noted in 10.1.9. Use one pint bottle for salinity sample.
- 10.1.12 Extra thermometers shall be supplied on each boat.

- 10.1.13 The shore-command post will carry spares of sample bottles, thermometers, etc.
- 10.1.14 Log sheets will be marked with black ball point pens.
- 10.1.15 All Secchi and Forel-Ule observation personnel will take measurements without polaroid or sunglasses. Do not use Secchi for Forel-Ule observations.
- 10.1.16 All boats will be supplied with 14 one-pint polypropylene bottles for salinity samples in the event the Salinometer is not functional; and also three 1-gallon plastic bottles. Use black plastic electrical tape to seal bottle, and "good" marking pens for labeling. The R/V Oregon II and R/V Bowers will be supplied with six additional pint bottles for their 3 August measurements.
- 10.1.17 All boats will take instructions from Boat 1 if any changes arise.
- 10.1.18 Supply 12 kits to NMFS. Each kit is to contain the following:
- Measurement Log Forms
 - Secchi Disk with 5 lb. wt. and 150' of line
 - Forel-Ule color comparator
 - Air Thermometer
 - Bucket Thermometer
 - Psychrometer
 - 12 one-pint polypropylene bottles
 - Plastic bucket and rope
 - Plastic tape
 - Black marking pen
 - Box, to be supplied by NMFS

LOPAN
GENERAL EXPLANATION
 FREQUENCY CHANNELS (spacing 100 MHz)
 BASIC PULSE RECURRENT RATES
 W-THRU 31% (within performance)
 SPECIFIC RECURRENT RATES assigned for identification (within performance)
 6.1.2
 EXAMPLE: 340
 RATES ON THIS CHART
 343

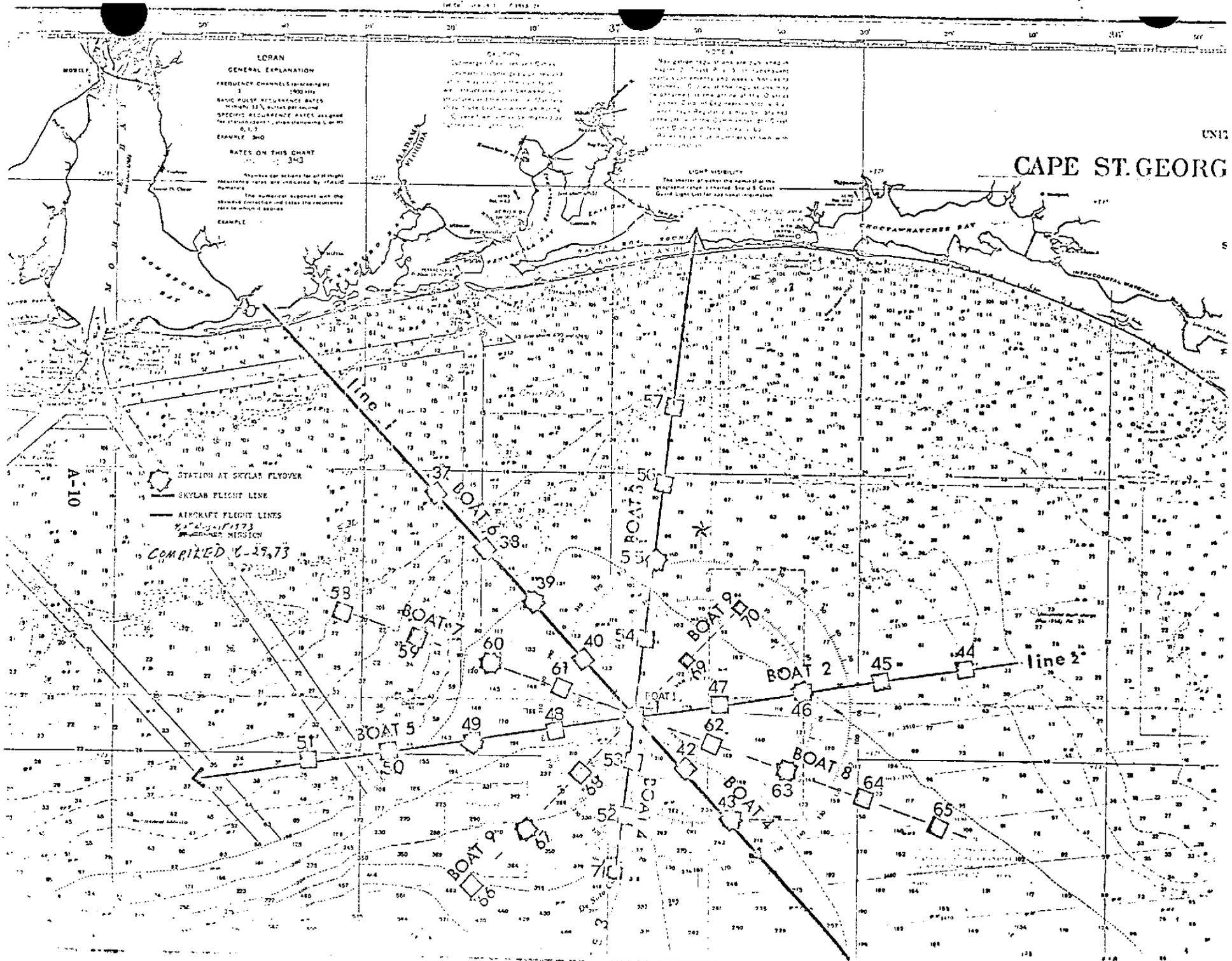
Shows the rates for all flight
 recurrences rates are indicated by **STANDARD**
 Recurrence
 The numerical segment with the
 shows the correction and lists the recurrence
 rate to which it applies
 EXAMPLE:

CAUTION
 (Interference) (Performance) (Coverage)
 (Interference) (Performance) (Coverage)

NOTE A
 Navigation lights are not shown in
 this chart. They are shown in
 the appropriate charts and are
 available to the pilot of this vessel
 in accordance with the appropriate
 regulations of the Coast Guard
 and the International Regulations
 for Preventing Collisions at Sea.

LIGHT VISIBILITY
 The character of each light is given in
 the appropriate chart and is
 available to the pilot of this vessel
 in accordance with the appropriate
 regulations of the Coast Guard
 and the International Regulations
 for Preventing Collisions at Sea.

UNIT
CAPE ST. GEORG



STATION AT SKYLAB FLYOVER
 SKYLAB FLIGHT LINE
 AIRCRAFT FLIGHT LINES
 1973 MISSION
 COMPILED 6-29-73

A-10

line 2

BOAT 5

BOAT 7

BOAT 6

BOAT 4

BOAT 9

BOAT 2

BOAT 8

BOAT 9

BOAT 3

BOAT 1

BOAT 10

BOAT 8

BOAT 4

BOAT 7

BOAT 6

BOAT 5

BOAT 4

BOAT 3

BOAT 2

BOAT 1

BOAT 65

BOAT 64

BOAT 63

BOAT 62

BOAT 61

BOAT 60

BOAT 59

BOAT 58

BOAT 57

BOAT 56

BOAT 55

BOAT 54

BOAT 53

BOAT 52

BOAT 51

BOAT 50

BOAT 49

BOAT 48

BOAT 47

BOAT 46

BOAT 45

BOAT 44

BOAT 43

BOAT 42

BOAT 41

BOAT 40

BOAT 39

BOAT 38

BOAT 37

BOAT 36

BOAT 35

BOAT 34

BOAT 33

BOAT 32

BOAT 31

BOAT 30

BOAT 29

BOAT 28

BOAT 27

BOAT 26

BOAT 25

BOAT 24

BOAT 23

BOAT 22

BOAT 21

BOAT 20

BOAT 19

BOAT 18

BOAT 17

BOAT 16

BOAT 15

BOAT 14

BOAT 13

BOAT 12

BOAT 11

BOAT 10

BOAT 9

BOAT 8

BOAT 7

BOAT 6

BOAT 5

BOAT 4

BOAT 3

BOAT 2

BOAT 1

APPENDIX A

PLAN A

EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR
ERL I - AIRCRAFT

AERIAL OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075

SKYLAB EXPERIMENT #240

4, 5 AUGUST 1973 MISSION

APPENDIX A
PLAN A

EARTH RESOURCES LABORATORY

MISSION REQUEST
ERL 1

AERIAL OBSERVATIONS & MEASUREMENTS

1. PROGRAM OR PROJECT:

Skylab Experiment #240

2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility

3. MISSION NUMBER: 075

4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing
for Oceanic Gamefish Assessment and Monitoring.

5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.)

Line 1, 2, and 3 are to be flown the day before the Skylab overflight and
the day of the Skylab overflight (August 4, 5).

Be over station 41, line 1, at 1200 CDT.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and
attach flight line maps.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola,
Florida, bounded by the coordinates 30°16'N, 86°51'W; 29°18'N, 85°47'W;
29°21'N, 87°56'W and encompasses a total area of approximately 3,200 sq.n.mi.
This test site is based on Skylab track No. 62. Flight line coordinates are
as follows:

Line 1 30°17.0'N, 87°42.4'W to 29°19.8'N, 86°41.7'W, length 78 n.mi.

Line 2 29°40.5'N, 86°11.0'W to 29°27.0'N, 87°50.4'W, length 87 n.mi.

Line 3 29°17.0'N, 86°59.0'W to 30°26.0'N, 86°50.0'W, length 69 n.mi.

7. MISSION CONSTRAINTS:

A. CLOUD COVER LIMITS: If cloud cover is greater than 30% below flight
altitude (10,000') a decision may be made not to
fly these lines. This decision will be made at
the command center.

B. SUN ANGLE: N/A

- C. OTHER CONSTRAINTS: (Describe flight constraints such as tides, atmosphere conditions, surface measurements, haze, coordinates, etc.)

Aircraft to be over (station 41, line 1) at (1200 CDT) the time of the Skylab overpass; also, fly these lines at the same approximate time on the day before the Skylab overpass.

8. COMMUNICATIONS REQUIREMENTS:

A. Radio beacon is to be deployed on boat at station 41, (363 KHz ID Code 'NAS [- . . - ... Morse Code]).

B. 6.9825 MHz aircraft to command boat and shore headquarters.

9. SPECIAL CONSIDERATIONS: (Sensors optimized for specific target, sun glint, etc.) A special radiosonde from Eglin AFB will be launched to coincide with the time of Skylab overflight.

Deploy gray scale and tri color targets before 0900 on mission day. These targets will be overflown with the C130 only. (Targets will be deployed at MTF target farm.)

The radio beacon on the boat at station 41 shall be used as a homing device. Sensors shall be optimized for water coverage.

Standard radiosonde data will be collected from Valpariso, Fla. (AF Eglin Field), Mobile, and Pensacola.

Conduct RS-18 and PRT-5 pre and postmission calibrations if possible.

Yellow or orange smoke bombs will be deployed by the surface vessels. These are not distress signals.

10. SENSOR REQUIREMENTS: (List sensors desired and configuration. For each sensor, list sensor designation, film, filter, lens, spectral range, line overlap. Information provided complements section 11.)

A. K17 Camera - color film (Ektachrome SO-397), haze filter (HF-3 or HF-4), 6" lens, 30% forward overlap

B. RS-18 - Scanning Radiometer, 8-14 microns

C. E-20D Spectrometer-scanning interval 1/sec, Spectral region: 4 to 1.10 microns.

D. PRT-5 - Spectral region 8-14 microns, Response 3 Hz

E. Hasselblad - Color IR(2443), Wratten 15, 40mm lens, 30% forward overlap.

F. Hasselblad - Color (2448) Wratten 2B, 40mm lens, 30% forward overlap. Expose all photography for water features. Make sure IR photography is not underexposed. (Prefer one-stop overexposure on IR.)

LCPAN

GENERAL EXPLANATION

FREQUENCY CHANNELS (MHz)

3

BASIC FREQUENCY RATES

WITHIN 3% SURVEILLANCE

SPECIFIC FREQUENCY RATES

FOR STATION IDENTIFICATION (CALL LETTERS)

EXAMPLE

RATES ON THIS CHART

3123

Secondary frequencies for primary

frequencies are indicated by 'C'

numbers.

The numerical equivalent with the

frequency rate is used as the frequency

rate to which it applies.

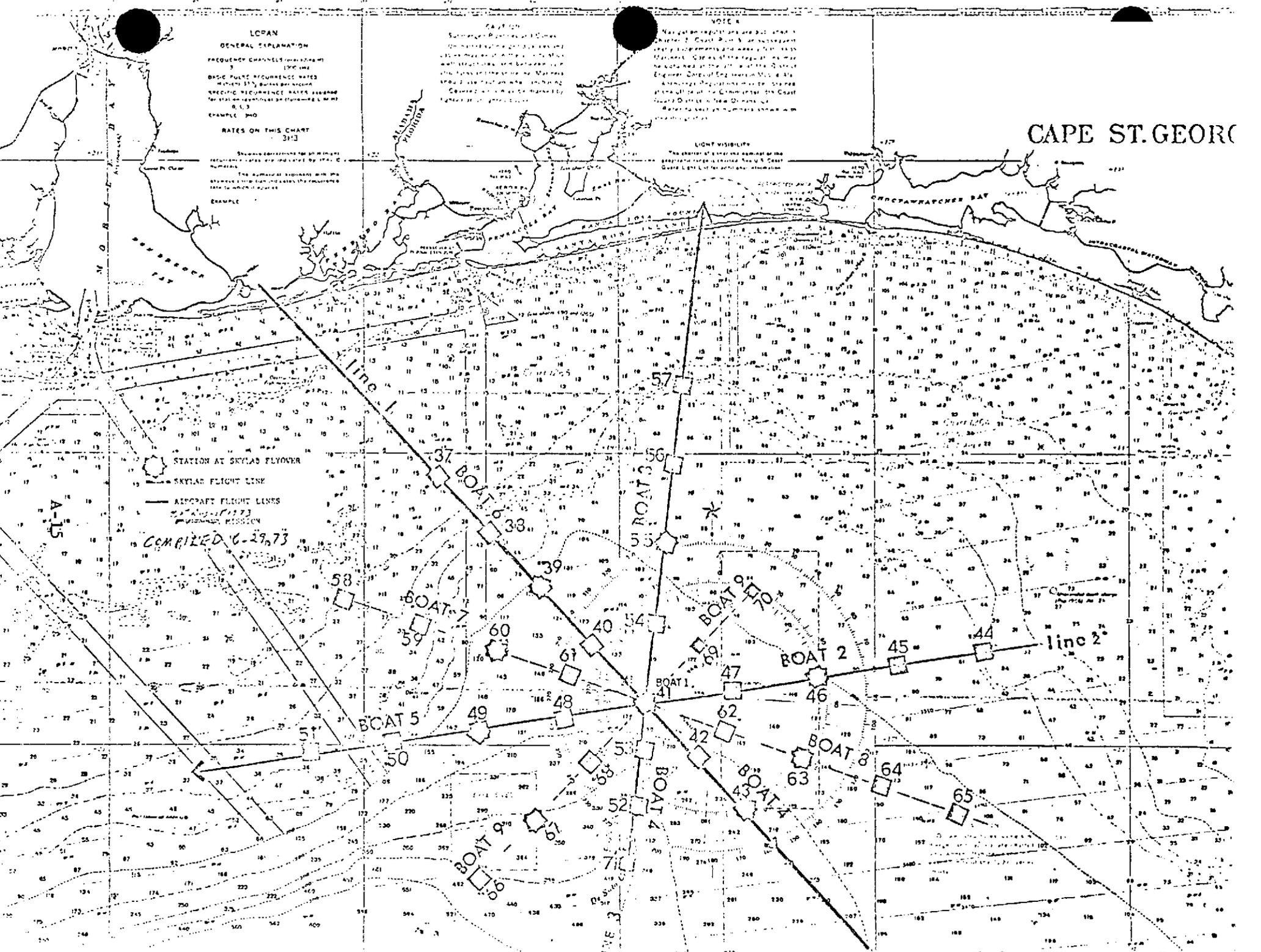
EXAMPLE

CAUTION
Submerged Rocks and Obstacles
The chart shows the position and depth
of rocks and obstructions. It does not
show the position of the bottom or the
depth of the water. It is the responsibility
of the skipper to use the chart in
conjunction with other information
to determine the position of the
bottom and the depth of the water.

NOTE
Navigation regulations are contained in
Chapter 2, Coast Pilot, and subsequent
parts of the regulations. It is the
responsibility of the skipper to know
the regulations in the area of the Coast
Engineer's District of jurisdiction. It is
the responsibility of the skipper to see
that all regulations are observed.
Refer to the regulations for details.

LIGHT VISIBILITY
The chart shows the range of the
geographic range of the U.S. Coast
Guard Light List for each light.

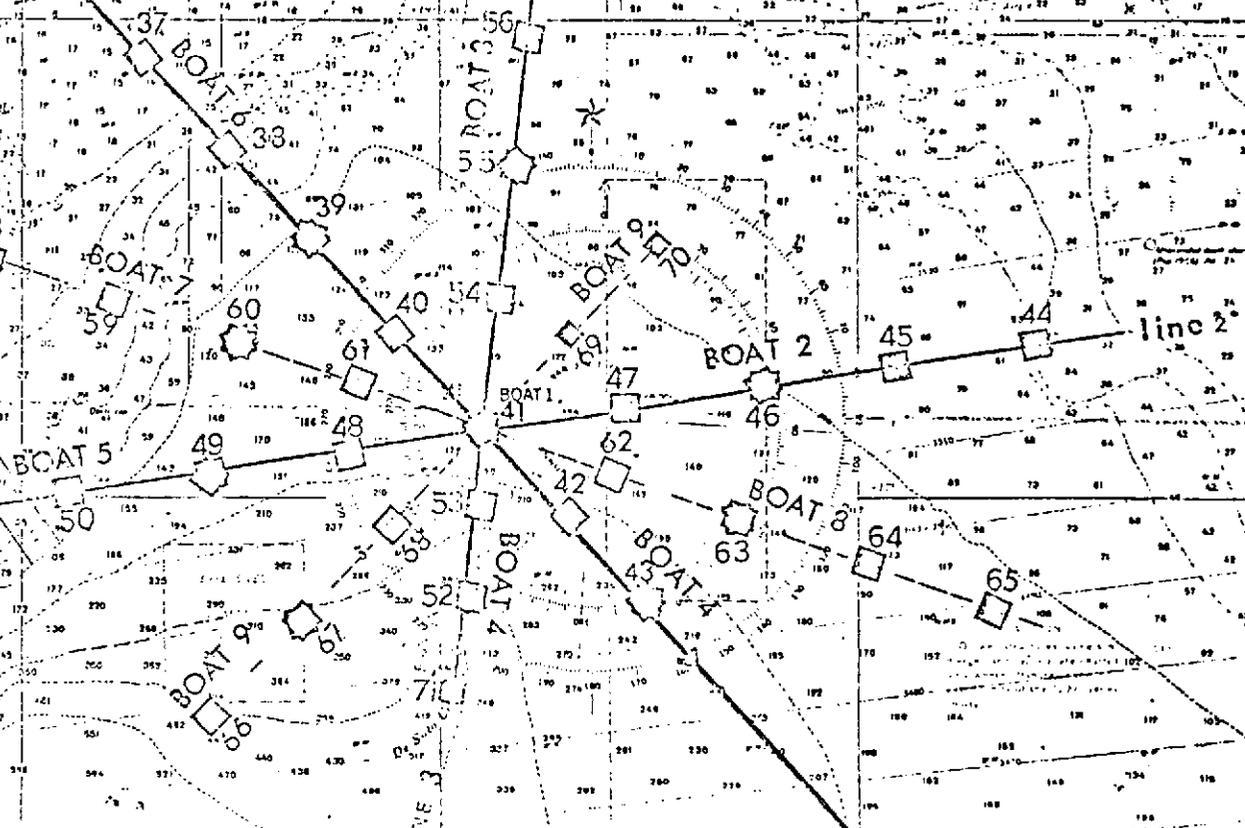
CAPE ST. GEORGE



STATION AT SKYLAD FLYOVER
SKYLAD FLIGHT LINE

AIRCRAFT FLIGHT LINES
A-15
MISSION

COMPILED 6-29-73



PLAN B

- SURFACE MEASUREMENTS
- AERIAL OBSERVATIONS

APPENDIX B
PLAN B
EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR
NINE (9) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075

SKYLAB EXPERIMENT #240

4, 5 AUGUST 1973 MISSION

EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR

NINE(9) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

1. PROGRAM OR PROJECT: Skylab Experiment #240
2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility
3. ERL MISSION NUMBER: 075
4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing
for Oceanic Gamefish Assessment and Monitoring
5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.)

4, 5 August 1973

Water observations and measurements will be made one day previous to Skylab overflight and the day of Skylab overflight.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and
attache Sea Truth Station Chart.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola, Florida bounded by the coordinates $30^{\circ}16'N$, $86^{\circ}51'W$; $28^{\circ}52'N$, $87^{\circ}24'W$; $28^{\circ}50'N$, $86^{\circ}19'W$ and encompasses a total area of approximately 5,400 sq.n.mi. The test site is based on Skylab track No. 62, northwest to southeast.

7. MISSION CONSTRAINTS:
 - A. CLOUD COVER LIMITS: N/A
 - B. SUN ANGLE: N/A
 - C. OTHER CONSTRAINTS: (Describe constraints such as tides, atmospheric conditions, surface measurements, coordination, etc.)

All boats should be on "flyover station" at the time of the Skylab overflight. (This time is approximately 1200 CDT.) Flyover stations are 839, 841, 843, 846, 849, 855, 860, 863, 867.

8. COMMUNICATIONS REQUIREMENTS:

A. DESIRED METHOD OF INTERESTED PARTIES NOTIFICATION & COORDINATION.

1. Destin will be the central communication headquarters.
2. 6.9825 MHz aircraft to command boat and shore headquarters
3. CB radio-command boat to other boats. Channel TBD. (ERL-27.575 and 1 -20 channels)
4. Marine radio frequency 2638

B. RADIO COMMUNICATIONS REQUIREMENTS:

Radio beacon will be on ship covering station 841, 363 KHz ID Code NAS (-. .- ... Morse Code)

9. SPECIAL CONSIDERATIONS:

- 9.1 9 sea truth boats will be used in this mission.
- 9.2 Sea truth data will be taken on two days (4, 5 August 1973).
- 9.3 Each boat on flight line is to be equipped with four orange smoke signals. The first smoke signal shall be set off at each boat on signal from command boat; the second four minutes later. Two will be used on each day of the mission.
- 9.4 "THE ERL" will be the Command Boat.
- 9.5 The Sea Truth Station Coordinates:

<u>STA.NO.</u>	<u>BOAT</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
837	6	29°46.7'N	87°09.6'W
838	6	29°40.7'N	87°03.7'W
839	6	29°35.2'N	86°57.5'W
840	6	29°29.0'N	86°51.5'W
841	1	29°23.2'N	86°45.0'W
842	4	29°17.3'N	86°39.5'W
843	4	29°12.0'N	86°34.0'W
852	4	29°12.6'N	86°46.6'W
853	4	29°18.5'N	86°45.8'W
871	4	29°06.5'N	86°47.5'W
857	3	29°55.8'N	86°40.6'W
856	3	29°48.0'N	86°41.8'W
855	3	29°40.0'N	86°42.8'W
854	3	29°31.4'N	86°44.1'W

<u>STA. NO.</u>	<u>BOAT</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
844	2	29°28.3'N	86°05.6'W
845	2	29°27.0'N	86°15.8'W
846	2	29°25.8'N	86°25.2'W
847	2	29°24.7'N	86°35.1'W
851	5	29°17.8'N	87°24.5'W
850	5	29°19.3'N	87°15.0'W
849	5	29°20.7'N	87°05.0'W
848	5	29°22.0'N	86°55.0'W
858	7	29°34.0'N	87°20.5'W
859	7	29°31.6'N	87°11.5'W
860	7	29°28.7'N	87°02.7'W
861	7	29°26.3'N	86°54.0'W
865	8	29°11.7'N	86°09.0'W
864	8	29°14.6'N	86°18.0'W
863	8	29°17.5'N	86°27.0'W
862	8	29°20.4'N	86°36.0'W
870	9	29°34.6'N	86°32.6'W
869	9	29°29.0'N	86°38.7'W
868	9	29°17.3'N	86°51.8'W
867	9	29°11.2'N	86°58.3'W
866	9	29°05.0'N	87°05.2'W

9.6.1 Boat 1, "THE ERL", Station 841
 Arrive at station 0900 CDT the day before Skylab overflight
 (4 August 1973) and commence data taking on 1.5 hr. intervals
 through 1800 CDT. Repeat the operation on 5 August 1973.

9.6.2 Boat 2

station	time (CDT)
844	0900
845	1030
846	1200 flyover
847	1330
846	1500
845	1630
844	1800

9.6.3 Boat 3

station	time (CDT)
857	0900
856	1030
855	1200 flyover
854	1330
855	1500
856	1630
857	1800

9.6.4 Boat 4, "Oregon II"

On August 5, the Oregon II will not make stations 852 at 1630 CDT and 871 at 1800 CDT. The Oregon II will remain at station 853 from 1500 to 1700 CDT to unload fish which have been placed on board for storage. At 1700 CDT the Oregon II will depart for Panama City. Remaining fish and samples will be transferred to trailer by NMFS personnel. LEC crew will transport samples from trailer to MTF.

9.6.5	Boat 5	851	0900
		850	1030
		849	1200 flyover
		848	1330
		849	1500
		850	1630
		851	1800
9.6.6	Boat 6	837	0900
		838	1030
		839	1200 flyover
		840	1330
		839	1500
		838	1630
		837	1800
9.6.7	Boat 7	858	0900
		859	1030
		860	1200 flyover
		861	1330
		860	1500
		859	1630
		858	1800
9.6.8	Boat 8, "Kingfisher II"	865	0900
		864	1030
		863	1200 flyover
		862	1330
		863	1500
		864	1630
		865	1800
9.6.9	Boat 9 "Bowers"	870	0700
		869	0830
		868	1030
		867	1200 flyover
		866	1330
		867	1500
		868	1630
869	1800*		

*Note: On 5 August the "Bowers" will not make station 869 at 1800 but will rendezvous with "THE ERL" at station 841 to transfer samples. In case of foul weather, the "Bowers" will proceed to the Penscola Coast Guard Station, and contact the Destin Command Center.

- 9.7 On the Skylab overpass day, each boat shall remain at the overpass station until instructed to move on to other stations. This also applies to pre-mission day. Instructions from R/V ERL on 2638 KHz.
- 9.8 Each boat shall have some type of navigation equipment for the exact location of stations. The boats shall be able to position themselves within one-half mile of the sample station. If possible, all boats will be position checked with radar (on Skylab overflight stations) by Boat No. 1.

10. SENSOR REQUIREMENTS:

10.1 Sea Truth Measurements:

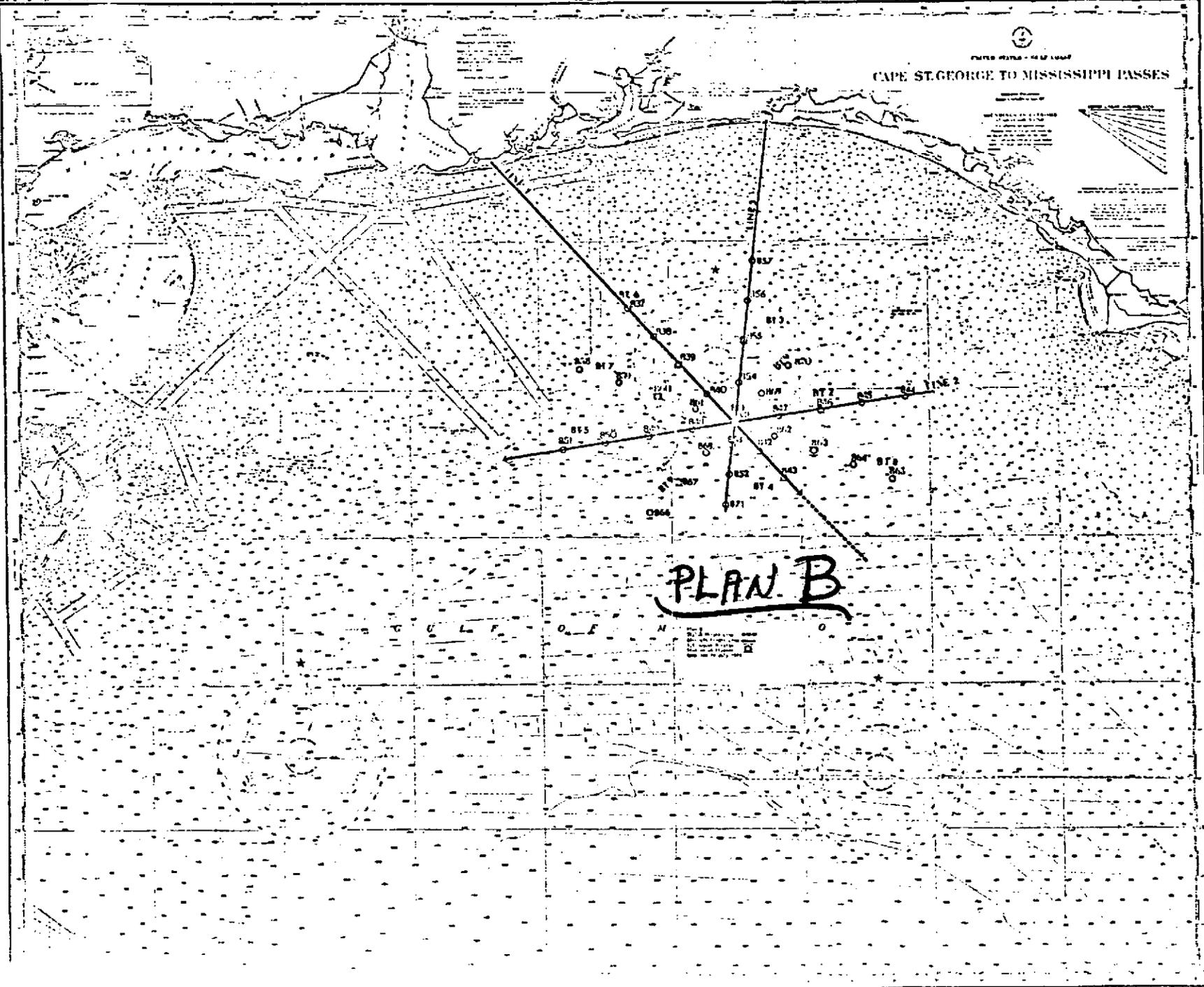
- 10.1.1 All boats except boat 1 (Command Boat) shall take the following data at each station. The data shall be recorded on a measurement log sheet.
- 10.1.1.1 Sample time to nearest minute.
- 10.1.1.2 Surface water temperature to nearest tenth °C.
- 10.1.1.3 Surface water salinity to hundredths of a ppt.
- 10.1.1.4 Air temperature to nearest tenth °C.
- 10.1.1.5 Wet and dry bulb psychrometer readings to nearest tenth of a degree.
- 10.1.1.6 Wind direction, quadrants (ex. N, SE, SSE, etc.)
- 10.1.1.7 Wind speed to nearest mile.
- 10.1.1.8 Secchi visibility to nearest foot.
- 10.1.1.9 Sea state to nearest foot.
- 10.1.1.10 Water depth if possible to nearest fathom.
- 10.1.1.11 Forel-Ule Color
- 10.1.1.12 Chlorophyll water sample number and volume of sample
- 10.1.1.13 Necessary remarks about condition at sample station such as boats in area, debris, fish sighted, etc. Atmospheric pressure, visibility, cloud % and type, and precipitation to be recorded on sheet.
- 10.1.1.14 ISCO spectroradiometers will be used on two boats: Boat 2 and Boat 6.
- 10.1.1.15 Take sky picture with Fish Eye camera on Boat 1 at each sampling period.

- 10.1.2 Command boat measurements at Station 841
 - 10.1.2.1 Take measurements from 0900 through 1800 4 August 1973. Repeat the operation on 5 August 1973.
 - 10.1.2.2 Take the following measurement every 1½ hours. 10.1.1.1 through 10.1.1.15. This includes 10.1.1.14 if the Isco is placed on "THE ERL" .
 - 10.1.2.3 Relative irradiance measurement will be made from Boat 1 at Skylab and aircraft overpass times using red, green, blue filters(depths to be specified later).
- 10.1.3 Each boat shall have literature required for proper description of sea state, wind direction, and cloud description.
- 10.1.4 Use data acquisition techniques reviewed in training session.
- 10.1.5 Each boat will be provided with a chlorophyll filtration system. After filtration the chlorophyll shall be frozen until analysis.
- 10.1.6 Two gallons of sea water will be used for each chlorophyll sample unless chlorophyll concentration is too large, then record amount of sea water filtered.
- 10.1.7 All samples shall be marked as to exact station number, date, time, volume and all other pertinent information.
- 10.1.8 Water temperatures will be taken with bucket thermometers.
- 10.1.9 RS-5 Salinometers will be used on the "Oregon II" and "Bowers" for their measurement on 3 August only.
- 10.1.10 Secchi disks will be provided with extra long ropes (150 ft.) Five pound weights will be attached to Secchi Disks.
- 10.1.11 The Salinometer will not be used for salinity except as noted in 10.1.9. Use one-pint bottles for salinity sample.
- 10.1.12 Extra thermometers shall be supplied on each boat.
- 10.1.13 The shore-command post will carry spares of sample bottles, thermometers, etc.
- 10.1.14 Log sheets will be marked with black ball point pens.
- 10.1.15 All Secchi and Forel-Ule observation personnel will take measurements without polaroid or sunglasses (on shady side of boat).
- 10.1.17 All boats will be supplied with 14 one-pint polypropylene bottles for salinity samples; and also three 1-gallon plastic bottles. Use black plastic electrical tape to seal bottle, and "good" marking pens for labeling. The "Oregon II" and "Bowers" will be supplied with 6 additional pint bottles for their 3 August measurements.

10.1.18 All boats will take instructions from Boat 1 if any changes arise.

10.1.19 Supply 12 kits to NMFS. Each kit is to contain the following:

- o Measurement Log Forms
- o Secchi Disk with 5 lb. wt. and 150 feet of line
- o Forel-Ule color comparator
- o Air Thermometer
- o Bucket Thermometer
- o Psychrometer (if available)
- o 12 one-pint polypropylene bottles
- o Plastic bucket and rope
- o Plastic tape
- o Black marking pen
- o Box, to be supplied by NMFS



CAPE ST. GEORGE TO MISSISSIPPI PASSES

PLAN B

B-10

APPENDIX B

PLAN B

EARTH RESOURCES LABORATORY

MISSION REQUEST

FOR

ERL I - AIRCRAFT

AERIAL OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075

SKYLAB EXPERIMENT #240

4, 5 AUGUST 1973 MISSION

EARTH RESOURCES LABORATORY

MISSION REQUEST
ERL 1

AERIAL OBSERVATIONS & MEASUREMENTS

1. PROGRAM OR PROJECT:

Skylab Experiment #240

2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility

3. MISSION NUMBER: 075

4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing
for Oceanic Gamefish Assessment and Monitoring.

5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.

Line 1, 2, and 3 are to be flown the day before the Skylab overflight and
the day of the Skylab overflight (August 4, 5).

Be over station 841, line 1, at 1200 CDT.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and
attach flight line maps.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola,
Florida, bounded by the coordinates 30°16'N, 86°51'W; 28°52'N, 87°24'W;
28°50'N, 86°19'W and encompasses a total area of approximately 5,400 sq.n.mi.
This test site is based on Skylab track No. 62. Flight line coordinates are
as follows:

Line 1 30°16.2'N, 87°40.7'W to 29°08.4'N, 86°30.0'W, length 92 n.mi.

Line 2 29°29.2'N, 85°59.0'W to 29°16.0'N, 87°38.8'W, length 89 n.mi.

Line 3 29°05.8'N, 86°47.6'W to 30°25.0'N, 86°36.5'W, length 80 n.mi.

7. MISSION CONSTRAINTS:

A. CLOUD COVER LIMITS: If cloud cover is greater than 30% below flight
altitude (10,000') a decision may be made not to
fly these lines. This decision will be made at
the command center.

B. SUN ANGLE: N/A

- C. OTHER CONSTRAINTS: (Describe flight constraints such as tides, atmosphere conditions, surface measurements, haze, coordinates, etc.)

Aircraft to be over (station 841, line 1) at (1200 CDT) the time of the Skylab overpass; also, fly these lines at the same approximate time on the day before the Skylab overpass.

8. COMMUNICATIONS REQUIREMENTS:

- A. Radio beacon is to be deployed on boat at station 41, (363 KHz ID Code NAS - . . - ... Morse Code).

- B. 6.9825 MHz aircraft to command boat and shore headquarters.

9. SPECIAL CONSIDERATIONS: (Sensors optimized for specific target, sun glint, etc.)

Deploy gray scale and tri color targets before 0900 on mission day. These targets will be overflown with the C130 only. (Targets will be deployed at MTF target farm.)

The radio beacon on the boat at station 841 shall be used as a homing device. Sensors shall be optimized for water coverage.

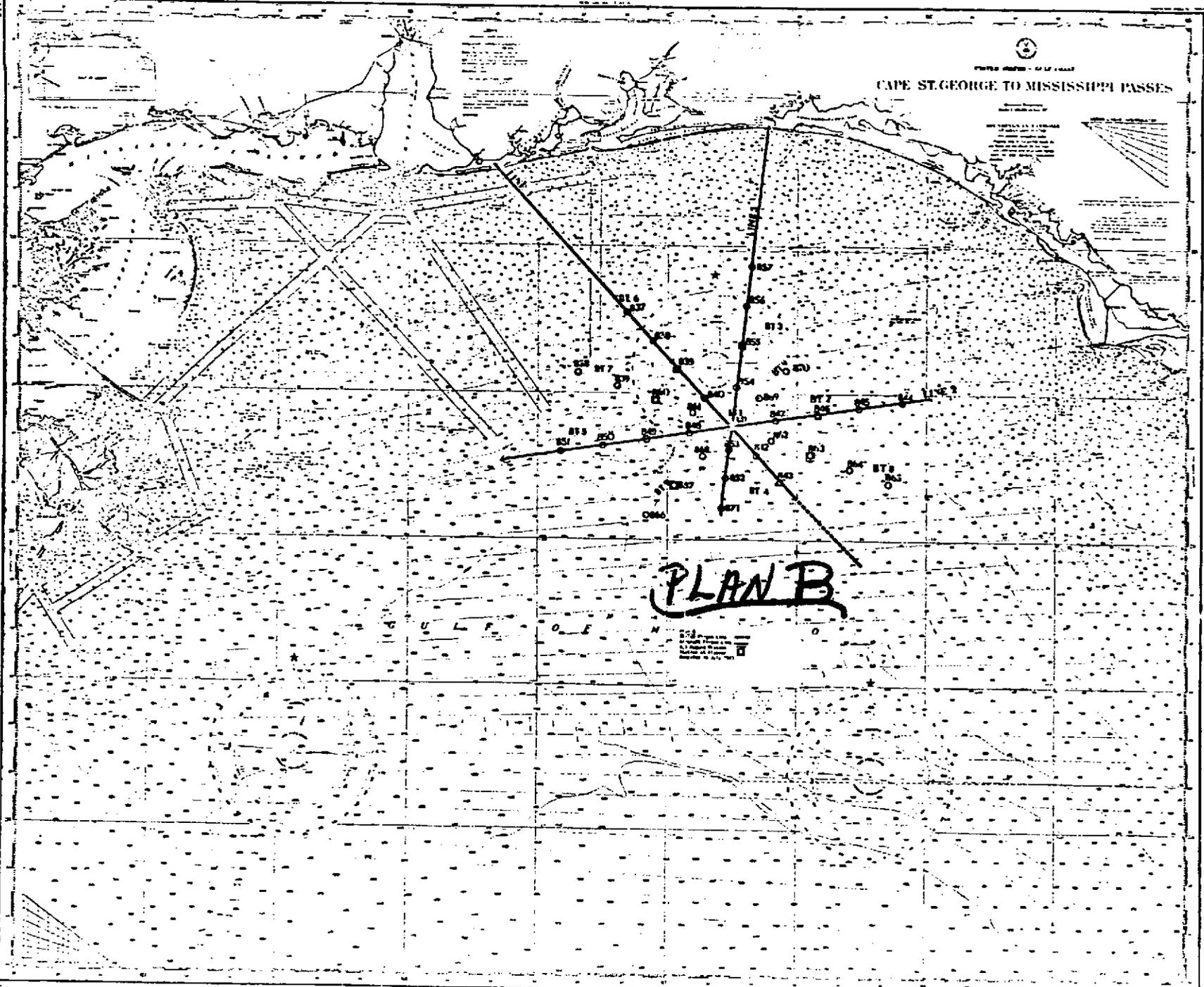
Standard radiosonde data will be collected from Valpariso, Fla. (AF Eglin Field), Mobile, and Pensacola. One radiosonde is to be launched from Valparaiso, Fla. to coincide with the time of Skylab overflight.

Conduct RS-18 and PRT-5 pre and postmission calibrations if possible.

Orange smoke devices will be deployed by the surface vessels. These are not distress signals.

10. SENSOR REQUIREMENTS: (List sensors desired and configuration. For each sensor, list sensor designation, film, filter, lens, spectral range, line overlap. Information provided complements section 11.)

- A. K17 Camera - color film (Ektachrome SO-397), haze filter (HF-3 or HF-4), 6" lens, 30% forward overlap
- B. RS-18 - Scanning Radiometer, 8-14 microns
- C. E-20D Spectrometer-scanning interval 1/sec, Spectral region: 4 to 1.10 microns.
- D. PRT-5 - Spectral region 8-14 microns, Response 3 Hz
- E. Hasselblad - Color IR(2443), Wratten 15, 40mm lens, 30% forward overlap.
- F. Hasselblad - Color (2448) Wratten 2B, 40mm lens, 30% forward overlap. Expose all photography for water features. Make sure IR photography is not underexposed. (Prefer one-stop overexposure on IR.)



B-15

PLAN C

- SURFACE MEASUREMENTS
- AERIAL OBSERVATIONS

APPENDIX C
PLAN C
EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR
TWO (2) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075
SKYLAB EXPERIMENT #240
10 AUGUST 1973 MISSION

EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR

TWO(2) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

1. PROGRAM OR PROJECT: Skylab Experiment #240
2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility
3. ERL MISSION NUMBER: 075
4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing for Oceanic Gamefish Assessment and Monitoring
5. MISSION DATE: (include all sorties such as mission number XX-1. XX-2, etc.)

7, 9, 10 August 1973

Water observations and measurements will be made by the personnel on "THE ERL" on 7, 9, 10 August 1973.

One additional boat will be used on 10 August 1973.
6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and attach Sea Truth Station Chart.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola, Florida bounded by the coordinates $30^{\circ}16'N$, $86^{\circ}51'W$; $39^{\circ}18'N$, $85^{\circ}47'W$; $29^{\circ}21'N$, $87^{\circ}56'W$ and encompasses a total area of approximately 3,200 sq.n.mi. The test site is based on Skylab track No. 62, northwest to southeast.
7. MISSION CONSTRAINTS:
 - A. CLOUD COVER LIMITS: N/A
 - B. SUN ANGLE: N/A
 - C. OTHER CONSTRAINTS: (Describe constraints such as tides, atmospheric conditions, surface measurements, coordination, etc.)

Both boats should be on "flyover station" at the time of Skylab overflight (1000 CDT). Flyover stations are 41 for "THE ERL" and 47 for the other boat.

8. COMMUNICATIONS REQUIREMENTS:

A. DESIRED METHOD OF INTERESTED PARTIES NOTIFICATION & COORDINATION.

1. Destin will be the central communication headquarters.
2. 6.9825 MHz aircraft to command boat and shore headquarters
3. CB radio-command boat to other boats. Channel TBD. (ERL-27.575 and 1 -20 channels)
4. Marine radio frequency 2638

B. RADIO COMMUNICATIONS REQUIREMENTS:

Radio beacon is to be placed on ship covering station 41, 363 KHz
ID Code NAS (-. .- ... Morse Code)

9. SPECIAL CONSIDERATIONS:

- 9.1 Two sea truth boats will be used in this mission.
- 9.2 Sea truth data will be taken on three days (7, 9, and 10 August 1973).
- 9.3 "THE ERL" will be the Command Boat.
- 9.4 The Sea Truth Station Coordinates:

<u>STA.NO.</u>	<u>BOAT</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
37	1	29°58.0'N	87°21.5'W
38	1	29°52.0'N	87°15.5'W
39	1	29°46.2'N	87°09.5'W
40	1	29°40.3'N	87°03.2'W
41	1	29°34.5'N	86°56.75'W
57	1	30°07.0'N	86°52.5'W
56	1	29°58.75'N	86°53.75'W
55	1	25°51.0'N	86°54.75'W
54	1	29°42.5'N	86°55.75'W
44	2	29°39.5'N	86°17.0'W
45	2	29°38.25'N	86°27.4'W
46	2	29°37.0'N	86°37.0'W
47	2	29°35.5'N	86°47.0'W

9.5.1 Boat 1, "THE ERL"

<u>STATION</u>	<u>DATE</u>	<u>TIME</u>
37	7	0700
38	7	0830
39	7	1000
40	7	1130
41	7	1300
54	7	1430
55	7	1600
56	7	1730
57	7	1900

9.5.1	<u>STATION</u>	<u>DATE</u>	<u>TIME</u>
	57	9	0700
	56	9	0830
	55	9	1000
	54	9	1130
	41	9	1300
	40	9	1430
	39	9	1600
	38	9	1730
	37	9	1900
	39	10	0700
	40	10	0830
	41 flyover sta.	10	1000
	54	10	1300
	55	10	1430
	56	10	1600
	57	10	1730

Remain on flyover station until all flight lines are completed.

9.5.2 Boat 2

	<u>STATION</u>	<u>DATE</u>	<u>TIME</u>
	45	10	0700
	46	10	0830
	47 flyover sta.	10	1000
	46	10	1300
	45	10	1430
	44	10	1600

Remain on flyover station until all flight lines are completed.

9.6. Each boat shall have some type of navigation equipment for the exact location of stations. The boats shall be able to position themselves within one-half mile of the sample station.

10. SENSOR REQUIREMENTS:

10.i Sea Truth Measurements:

10.1.1 Both boats shall take the following measurements:

10.1.1.1 Sample time to nearest minute.

10.1.1.2 Surface water temperature to nearest tenth °C.

10.1.1.3 Surface water salinity samples.

10.1.1.4 Air temperature to nearest tenth °C.

10.1.1.5 Wet and dry bulb psychrometer readings to nearest tenth of a degree.

10.1.1.6 Wind direction, quadrants (ex. N, SE, SSE, etc.)

- 10.1.1.7 Wind speed to nearest mile.
- 10.1.1.8 Secchi visibility to nearest foot.
- 10.1.1.9 Sea state to nearest foot.
- 10.1.1.10 Water depth if possible to nearest fathom.
- 10.1.1.11 Forel-Ule Color
- 10.1.1.12 Chlorophyll water sample number and volume of sample
- 10.1.1.13 Necessary remarks about condition at sample station such as boats in area, debris, fish sighted, etc. Atmospheric pressure, visibility, cloud % and type, and precipitation to be recorded.
- 10.1.1.14 Take sky picture with Fish Eye camera on Boat 1 at each sampling period.
- 10.1.2 Relative irradiance measurement will be made from Boat 1 at Skylab and aircraft overpass times using red, green, blue filters(depths to be specified later).
- 10.1.3 Each boat shall have literature required for proper description of sea state, wind direction, and cloud description.
- 10.1.4 Use data acquisition techniques reviewed in training session.
- 10.1.5 Each boat will be provided with a chlorophyll filtration system. After filtration the chlorophyll shall be frozen until analysis.
- 10.1.6 Two gallons of sea water will be used for each chlorophyll sample unless chlorophyll concentration is too large, then record amount of sea water filtered.
- 10.1.7 All samples shall be marked as to exact station number, date, time, volume and all other pertinent information.
- 10.1.8 Water temperature will be taken with bucket thermometers.
- 10.1.9 Secchi disks will be provided with extra long ropes (150 ft.) Five pound weights will be attached to Secchi Disks.
- 10.1.10 All boats will be supplied with pint polypropylene bottles for salinity samples.
- 10.1.11 Extra thermometers shall be supplied on each boat.
- 10.1.12 Log sheets will be marked with black ball point pens.
- 10.1.13 All Secchi and Forel-Ule observation personnel will take measurements without polaroid or sunglasses (on shady side of boat).

- 10.1.14 All boats will be supplied with pint polypropylene bottles for salinity samples and also three 1-gallon plastic bottles. Use black plastic electrical tape to seal bottle, and "good" marking pens for labeling.
- 10.1.15 The "other" boat will take instructions from Boat 1 if any changes arise.

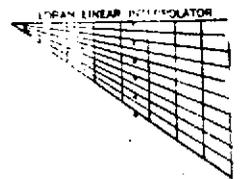


UNITED STATES - GULF COAST

CAPE ST. GEORGE TO MISSISSIPPI PASSE

Monument Projection
Scale 1:100,000 of Lat. 30°

**BOUNDINGS IN FATHOMS
AT MEAN LOW WATER**
(For offshore navigation only)
Fathoms less in parentheses inside the
red lines are not shown on this sheet
See 1:200 scale and look note further
aboard for each marking

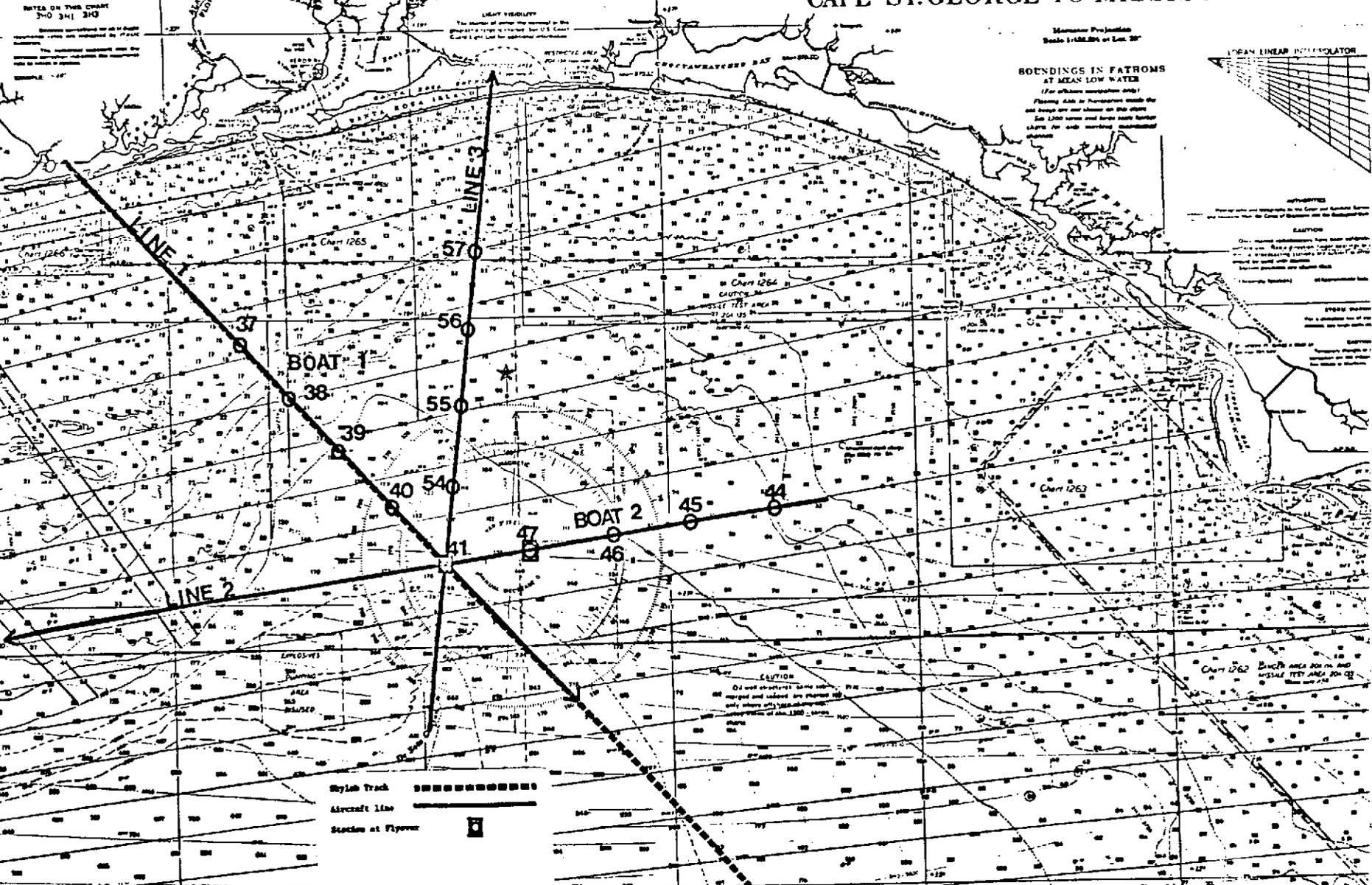


GENERAL EXPLANATION
FREQUENCY CHANNELS indicated by
S
SOUND SIGNALS indicated by
SOUND SIGNALS indicated by
SOUND SIGNALS indicated by
SOUND SIGNALS indicated by

CAUTION
Submerged Piers and Caissons
Underway barges and other
obstructions may be in the
vicinity of the roadway and
navigation should be made
with caution. Caution should
be used in the vicinity of
the roadway.

NOTE 1
Navigation regulations are established in
Chapter 2, Coast Pilot 2, or subsequent
amendments thereto, and apply to
navigation. Copies of the regulations may
be obtained at the office of the District
Engineer, Corps of Engineers, Mobile, Ala.
Arrivage Regulations may be obtained
at the office of the Commander, 3rd Coast
Guard District at New Orleans, La.
Refer to section numbers shown on
this diagram.

LIGHT VISIBILITY
The distance of view of the light
is given in feet or meters.



C-8

Boat Track
Aircraft line
Station at Flyover

PLAN C

Compiled 18 July 1973

APPENDIX C
PLAN C
EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR
ERL I - AIRCRAFT

AERIAL OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075
SKYLAB EXPERIMENT #240
10 AUGUST 1973 MISSION

NOTE: This mission will not be flown if Skylab takes data on Track 62 on 5 August 1973.

EARTH RESOURCES LABORATORY

MISSION REQUEST
ERL I

AERIAL OBSERVATIONS & MEASUREMENTS

1. PROGRAM OR PROJECT:

Skylab Experiment #240

2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility

3. MISSION NUMBER: 075

4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing
for Oceanic Gamefish Assessment and Monitoring.

5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.)

Lines 1, 2, and 3 are to be flown the day of Skylab overflight. (August 10)

Be over station 41, line 1, at 1000 CDT.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and
attach flight line maps.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola, Florida, bounded by the coordinates 30°16'N, 86°51'W; 29°18'N, 85°47'W; 29°21'N, 87°56'W and encompasses a total area of approximately 3,200 sq.n.mi. This test site is based on Skylab track No. 62. Flight line coordinates are as follows:

Line 1 30°17.0'N, 87°42.4'W to 29°19.8'N, 86°41.7'W, length 78 n.mi.

Line 2 29°41.5'N, 86°11.0'W to 29°27.0'N, 87°50.4'W, length 87 n.mi.

Line 3 29°17.0'N, 86°59.0'W to 30°26.0'N, 86°50.0'W, length 69 n.mi.

7. MISSION CONSTRAINTS:

A. CLOUD COVER LIMITS: If cloud cover is greater than 30% below flight altitude (10,000') a decision may be made not to fly these lines. This decision will be made at the command center.

B. SUN ANGLE: N/A

- C. OTHER CONSTRAINTS: (Describe flight constraints such as tides, atmosphere conditions, surface measurements, haze, coordinates, etc.)

Aircraft to be over (station 41, line 1) at (1000 CDT) the time of the Skylab overpass.

8. COMMUNICATIONS REQUIREMENTS:

- A. Radio beacon is to be deployed on boat at station 41, (363 KHz ID Code NAS [-. . - ... Morse Code]).
- B. 6,9825 MHz aircraft to command boat and shore headquarters.

9. SPECIAL CONSIDERATIONS: (Sensors optimized for specific target, sun glint, etc.)

Deploy gray scale and tri color targets before 0900 on mission day. These targets will be overflown with the C130 only. (Targets will be deployed at MTF target farm.)

The radio beacon on the boat at station 41 shall be used as a homing device. Sensors shall be optimized for water coverage.

Standard radiosonde data will be collected from Valpariso, Fla. (AF Eglin Field), Mobile, and Pensacola. One radiosonde is to be launched from Valpariso, Fla., to coincide with the time of Skylab overflight.

Conduct RS-18 and PRT-5 pre and postmission calibrations if possible.

10. SENSOR REQUIREMENTS: (List sensors desired and configuration. For each sensor, list sensor designation, film filter, lens, spectral range, line overlap. Information provided complements section 11.)

- A. K17 Camera - color film (Ektachrome SO-397), haze filter (HF-3 or HF-4), 6" lens, 30% forward overlap
- B. RS-18 - Scanning Radiometer, 8-14 microns
- C. E-20D Spectrometer-scanning interval 1/sec, Spectral region: 4 to 1.10 microns.
- D. PRT-5 - Spectral region 8-14 microns, Response 3 Hz
- E. Hasselblad - Color IR(2443), Wratten 15, 40mm lens, 30% forward overlap.
- F. Hasselblad - Color (2443) Wratten 2B, 40mm lens, 30% forward overlap. Expose all photography for water features. Make sure IR photography is not underexposed. (Prefer one-stop overexposure on IR.)

LORAN
GENERAL EXPLANATION

PRECEDENCY ORANGES INDICATING IN 1950 AND
EARLY INCOME REQUIREMENT RATES
IN 1951. All values are based on
SPECIFIC REQUIREMENT RATES DETERMINED
BY THE COMMISSIONER OF GENERAL INVESTIGATION
OF THE
O. L. I.
Division 3400

RATES ON THIS CHART
3-0 3-0 3-0

Minimum and maximum values are shown
for each rate and are based on the
assumption that the rate is constant
throughout the period of the
survey.

EXAMPLE: "1-1"

CAUTION
Submerged Rocks and Cables
Uncharted Submerged Rocks and
Cables may exist in the vicinity of all
well marked rocks and beacons both
uncharted and charted. The presence
of such obstructions when anchoring
should be ascertained by sounding
before dropping anchor.

NOTE A
Navigation regulations are established in
Chapter 2, Coast Pilot 2, or passages
having movements and safety hazards to
navigation. Copies of the regulations may
be obtained at the office of the District
Engineer, Coast of Engineers-Mississippi
River and Gulf of Mexico, New Orleans, La.
or the office of the Commander, 8th Coast
Guard District in New Orleans, La.
Sounding chart numbers shown with
any description.

LIGHT VARIABILITY
The number of minutes the lamp is
on during each revolution of the light
is given in the light description.

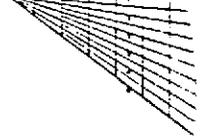
UNITED STATES - GULF COAST

CAPE ST. GEORGE TO MISSISSIPPI PASS

Meridian Projection
Scale 1:50,000 at Lat. 30°

SOUNDINGS IN FATHOMS
AT MEAN LOW WATER
(The above soundings are
based on a datum of Mean Low Water
at the time of the survey. The
soundings are not shown on the chart
for 1000 yards and larger near
shores for each sounding indicated
depths.)

LORAN LINEAR IN 1:50,000

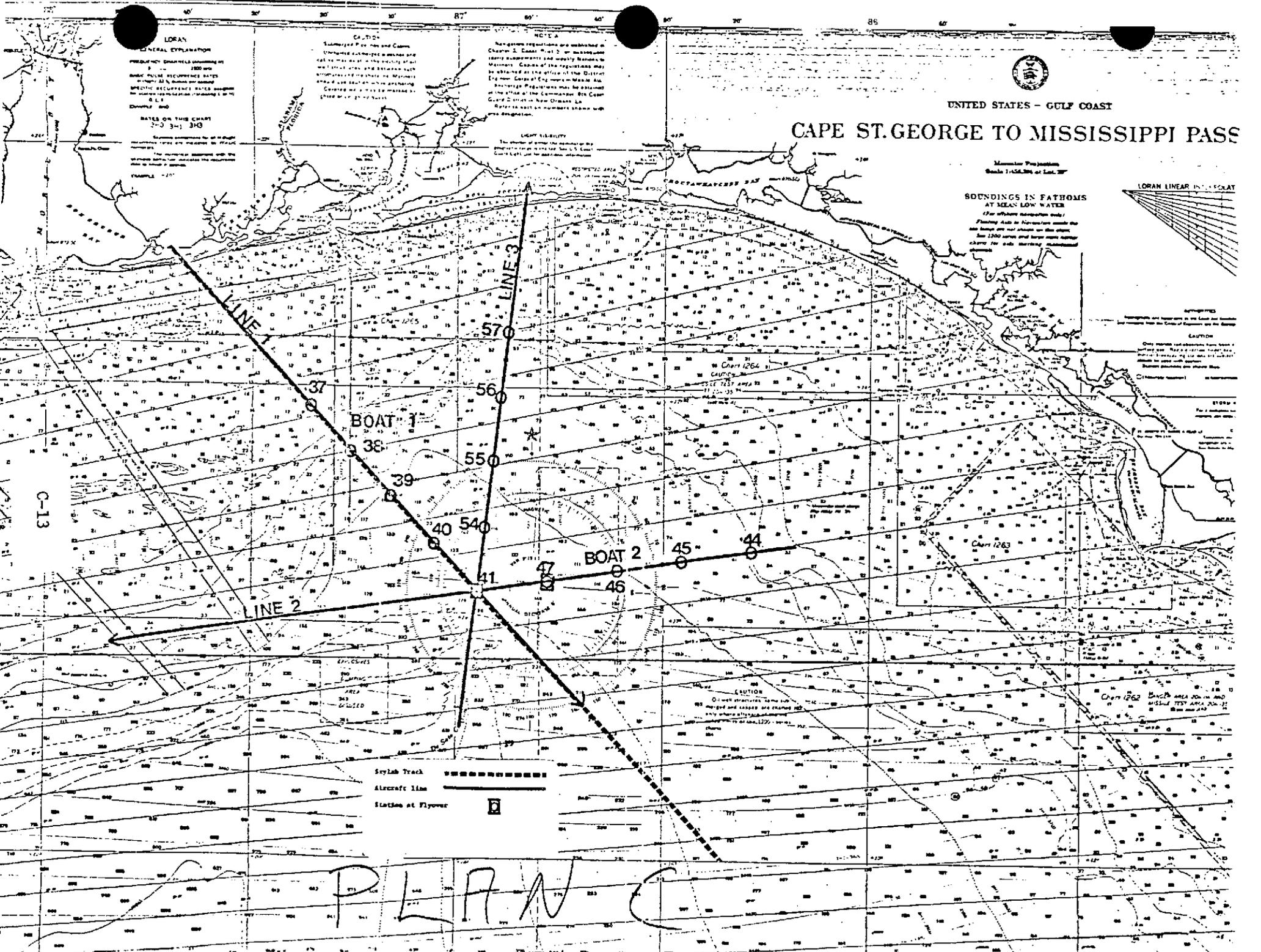


CAUTION

Only soundings published from 1950
and later are shown. All soundings
published prior to 1950 are shown
in italics and are shown only
where they are of value.

NOTE B

Page 2 of 2



Syrah Track 
Aircraft line 
Station at Flyover 

PLAN C

PLAN D

- SURFACE MEASUREMENTS
- AERIAL OBSERVATIONS

APPENDIX D

PLAN D

EARTH RESOURCES LABORATORY

MISSION REQUEST

FOR

TWO (2) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075

SKYLAB EXPERIMENT #240

10 AUGUST 1973 MISSION

EARTH RESOURCES LABORATORY

MISSION REQUEST
FOR

TWO(2) SEA TRUTH BOATS

WATER SURFACE OBSERVATION & MEASUREMENTS

1. PROGRAM OR PROJECT: Skylab Experiment #240

2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W.-Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility

3. ERL MISSION NUMBER: 075

4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing
for Oceanic Gamefish Assessment and Monitoring

5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.)

7, 9, 10 August 1973

Water observations and measurements will be made by the personnel on
"THE ERL" on 7, 9, 10 August 1973. One additional boat will be used on
10 August 1973.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and
attach Sea Truth Station Chart.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola,
Florida bounded by the coordinates 30°16'N, 86°51'W; 28°52'N, 87°24'W;
28°50'N, 86°19'W and encompasses a total area of approximately 5,400 sq.n.mi.
The test site is based on Skylab track No. 62, northwest to southeast.

7. MISSION CONSTRAINTS:
 - A. CLOUD COVER LIMITS: N/A
 - B. SUN ANGLE: N/A
 - C. OTHER CONSTRAINTS: (Describe constraints such as tides, atmospheric
conditions, surface measurements, coordination, etc.)

Both boats should be on "flyover station" at the time of Skylab over-
flight (1000 CDT). Flyover stations are 841 for "THE ERL" and 847 for
the other boat.

8. COMMUNICATIONS REQUIREMENTS:

A. DESIRED METHOD OF INTERESTED PARTIES NOTIFICATION & COORDINATION.

1. Destin will be the central communication headquarters.
2. 6.9825 MHz aircraft to command boat and shore headquarters
3. CB radio-command boat to other boats. Channel TBD. (ERL-27.575 and 1 -20 channels)
4. Marine radio frequency 2638

B. RADIO COMMUNICATIONS REQUIREMENTS:

Radio beacon is to be placed on ship covering station 841, 363 KHz
ID Code NAS (-. .- ... Morse Code)

9. SPECIAL CONSIDERATIONS:

- 9.1 Two sea truth boats will be used in this mission.
- 9.2 Sea truth data will be taken on three days (7, 9, 10 August 1973).
- 9.3 "THE ERL" will be the Command Boat.
- 9.4 The Sea Truth Station Coordinate:

<u>STA. NO.</u>	<u>BOAT</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
837	1	29°46.7'N	87°09.6'W
838	1	29°40.7'N	87°03.7'W
839	1	29°35.2'N	86°57.5'W
840	1	29°29.0'N	86°51.5'W
841	1	29°23.2'N	86°45.0'W
857	1	29°55.8'N	86°40.6'W
856	1	29°48.0'N	86°41.8'W
855	1	29°40.0'N	86°42.8'W
854	1	29°31.4'N	86°44.1'W
844	2	29°28.3'N	86°05.6'W
845	2	29°27.0'N	86°15.8'W
846	2	29°25.8'N	86°25.2'W
847	2	29°24.7'N	86°35.1'W

9.5.1 Boat 1, "THE ERL"

<u>STATION</u>	<u>DATE</u>	<u>TIME</u>
837	7	0700
838	7	0830
839	7	1000
840	7	1130
841	7	1300
854	7	1430
855	7	1600
856	7	1730
857	7	1900

<u>STATION</u>	<u>DATE</u>	<u>TIME</u>
857	9	0700
856	9	0830
855	9	1000
854	9	1130
841	9	1300
840	9	1430
839	9	1600
838	9	1730
837	9	1900
839	10	0700
840	10	0830
841 flyover sta.	10	1000
854	10	1300
855	10	1430
856	10	1600
857	10	1730

Remain on flyover station until all flight lines are completed.

9.5.2 Boat 2

<u>STATION</u>	<u>DATE</u>	<u>TIME</u>
845	10	0700
846	10	0830
847 flyover sta.	10	1000
846	10	1300
845	10	1430
844	10	1600

Remain on flyover station until all flight lines are completed.

9.6 Each boat shall have some type of navigation equipment for the exact location of stations. The boats shall be able to position themselves within one-half mile of the sample station.

10. SENSOR REQUIREMENTS:

10.1 Sea Truth Measurements:

10.1.1 Both boats shall take the following measurements:

10.1.1.1 Sample time to nearest minute

10.1.1.2 Surface water temperature to nearest tenth °C.

10.1.1.3 Surface water salinity samples.

10.1.1.4 Air temperature to nearest tenth °C.

10.1.1.5 Wet and dry bulb psychrometer readings to nearest tenth of a degree.

10.1.1.6 Wind direction, quadrants (ex. N, SE, SSE, etc.)

- 10.1.1.7 Wind speed to nearest mile.
- 10.1.1.8 Secchi visibility to nearest foot.
- 10.1.1.9 Sea state to nearest foot.
- 10.1.1.10 Water depth if possible to nearest fathom.
- 10.1.1.11 Forel-Ule Color
- 10.1.1.12 Chlorophyll water sample number and volume of sample
- 10.1.1.13 Necessary remarks about condition at sample station such as boats in area, debris, fish sighted, etc. Atmospheric pressure, visibility, cloud % and type, and precipitation to be recorded.
- 10.1.1.14 Take sky picture with Fish Eye camera on Boat 1 at each sampling period.
- 10.1.2 Relative irradiance measurement will be made from Boat 1 at Skylab and aircraft overpass times using red, green, blue filters (depths to be specified later).
- 10.1.3 Each boat shall have literature required for proper description of sea state, wind direction, and cloud description.
- 10.1.4 Use data acquisition techniques reviewed in training session.
- 10.1.5 Each boat will be provided with a chlorophyll filtration system. After filtration the chlorophyll shall be frozen until analysis.
- 10.1.6 Two gallons of sea water will be used for each chlorophyll sample unless chlorophyll concentration is too large, then record amount of sea water filtered.
- 10.1.7 All samples shall be marked as to exact station number, date, time, volume and all other pertinent information.
- 10.1.8 Water temperatures will be taken with bucket thermometers.
- 10.1.9 Secchi disks will be provided with extra long ropes (150 ft.) Five pound weights will be attached to Secchi Disks.
- 10.1.10 All boats will be supplied with pint polypropylene bottles for salinity samples.
- 10.1.11 Extra thermometers shall be supplied on each boat.
- 10.1.12 Log sheets will be marked with black ball point pens.
- 10.1.13 All Secchi and Forel-Ule observation personnel will take measurements without polaroid or sunglasses (on shady side of boat).

10.1.14 All boats will be supplied with pint polypropylene bottles for salinity samples; and also three 1-gallon plastic bottles. Use black plastic electrical tape to seal bottle, and "good" marking pens for labeling.

10.1.15 The "other" boat will take instructions from Boat 1 if any changes arise.

APPENDIX D

PLAN

EARTH RESOURCES LABORATORY

MISSION REQUEST

FOR

ERL I - AIRCRAFT

AERIAL OBSERVATION & MEASUREMENTS

PROJECT/MISSION TITLE

APPLICATION OF REMOTE SENSING FOR
OCEANIC GAMEFISH ASSESSMENT AND MONITORING

MISSION NUMBER 075

SKYLAB EXPERIMENT #240

10 AUGUST 1973

NOTE: This mission will not be flown if Skylab takes data on Track 62 on 5 August 1973.

EARTH RESOURCES LABORATORY

MISSION REQUEST
ERL 1

AERIAL OBSERVATIONS & MEASUREMENTS

1. PROGRAM OR PROJECT:

Skylab Experiment #240

2. REQUESTING ORGANIZATION OR INDIVIDUAL:

W. Stevenson - NMFS - Mississippi Test Facility
J. Weldon - ERL - Mississippi Test Facility
Glade Woods - NMFS - Mississippi Test Facility

3. MISSION NUMBER: 075

4. MISSION NAME: Skylab Experiment #240, Application of Remote Sensing
for Oceanic Gamefish Assessment and Monitoring.

5. MISSION DATE: (include all sorties such as mission number XX-1, XX-2, etc.)

Lines 1, 2, and 3 are to be flown the day of the Skylab overflight (10 August 1973).

Be over station 841, line 1, at 1000 CDT.

6. SITE DESCRIPTION: (Give narrative description of site(s), coordinates and attach flight line maps.)

This site is a triangular area in the N.E. Gulf of Mexico south of Pensacola, Florida, bounded by the coordinates $30^{\circ}16'N$, $86^{\circ}51'W$; $28^{\circ}52'N$, $87^{\circ}24'W$; $28^{\circ}50'N$, $86^{\circ}19'W$ and encompasses a total area of approximately 5,400 sq.n.mi. This test site is based on Skylab track No. 62. Flight line coordinates are as follows:

Line 1 $30^{\circ}16.2'N$, $87^{\circ}40.7'W$ to $29^{\circ}08.4'N$, $86^{\circ}30.0'W$, length 92 n.mi.

Line 2 $29^{\circ}29.2'N$, $85^{\circ}59.0'W$ to $29^{\circ}16.0'N$, $87^{\circ}38.8'W$, length 89 n.mi.

Line 3 $29^{\circ}05.8'N$, $86^{\circ}47.6'W$ to $30^{\circ}25.0'N$, $86^{\circ}36.5'W$, length 80 n.mi.

7. MISSION CONSTRAINTS:

A. CLOUD COVER LIMITS: If cloud cover is greater than 30% below flight altitude (10,000') a decision may be made not to fly these lines. This decision will be made at the command center.

B. SUN ANGLE: N/A

- C. OTHER CONSTRAINTS: (Describe flight constraints such as tides, atmosphere conditions, surface measurements, haze, coordinates, etc.)

Aircraft to be over (station 841, line 1) at (1000 CDT) the time of the Skylab overpass.

8. COMMUNICATIONS REQUIREMENTS:

- A. Radio beacon is to be deployed on boat at station 841, (363 KHz ID Code NAS [- . . - ... Morse Code]).

- B. 6.9825 MHz aircraft to command boat and shore headquarters.

9. SPECIAL CONSIDERATIONS: (Sensors optimized for specific target, sun glint, etc.)

Deploy gray scale and tri color targets before 0900 on mission day. These targets will be overflown with the C130 only. (Targets will be deployed at MTF target farm.)

The radio beacon on the boat at station 841 shall be used as a homing device. Sensors shall be optimized for water coverage.

Standard radiosonde data will be collected from Valpariso, Fla. (AF Eglin Field), Mobile, and Pensacola. One radiosonde is to be launched from Valpariso, Fla., to coincide with the time of Skylab overflight.

Conduct RS-18 and PRT-5 pre and postmission calibrations if possible.

10. SENSOR REQUIREMENTS: (List sensors desired and configuration. For each sensor, list sensor designation, film, filter, lens, spectral range, line overlap. Information provided complements section 11.)

- A. K17 Camera - color film (Ekachrome SO-397), haze filter (HF-3 or HF-4), 6" lens, 30% forward overlap

- B. RS-18 - Scanning Radiometer, 8-14 microns

- C. E-20D Spectrometer-scanning interval 1/sec, Spectral region: 4 to 1.10 microns.

- D. PRT-5 - Spectral region 8-14 microns, Response 3 Hz

- E. Hasselblad - Color IR(2443), Wratten 15, 40mm lens, 30% forward overlap.

- F. Hasselblad - Color (2448) Wratten 2B, 40mm lens, 30% forward overlap. Expose all photography for water features. Make sure IR photography is not underexposed. (Prefer one-stop overexposure on IR.)

APPENDIX E

OPERATIONS PLAN

FOR

R/V OREGON II

AND

R/V BOWERS

APPENDIX E

OPERATIONS PLAN FOR THE R/V OREGON II FROM JULY 18 THRU AUGUST 10, 1973

SHADOWGRAPH AND SKYLAB PROJECT PARTICIPATION

SHADOWGRAPH OPERATIONS

1. Mission Time Frame: July 18 thru August 10, 1973.
2. Area of Activity: Northern Gulf of Mexico, off Panama City, Mobile Bay, and Louisiana Coast near mouth of Mississippi River.
3. Mission Port: U.S. Naval Coastal Systems Laboratory (NCSL), Panama City, Florida. Telephone - 904/234-4362. Vessel berthing facilities have been arranged.
4. Project Personnel:
 - Walter F. Gandy - NMFS, Co-Party Chief
 - Frank P. Wittmann - NMFS, Co-Party Chief
 - Byron B. McLemore - NMFS, Elec. Technician
 - Pat McKim - NMFS, Elec. Technician
 - Curtis Campbell - General Electric Co., Elec. Engineer
 - Arthur Koym - Gould Electronics, Elec. Engineer
 - Peter Cummings - Gould Electronics, Elec. Technician
5. Mission Purpose: Test and evaluate the Shadowgraph System in selected areas of the N.E. Gulf of Mexico under the supervision of NMFS/FEL. The NMFS Vessel, R/V BOWERS, will also participate during the same time frame.
6. Communications: Radio communications between the OREGON II and NCSL will be on _____. Communications between the OREGON II and the R/V BOWERS will be on 2638 KHz.
7. Mission Constraints: Availability of R/V OREGON II on 4 and 5 August 1973 for Skylab ops. participation.
8. Operations Schedule:
 - July 18, 1973 - Arrive Panama City, Florida, U.S. Naval Coastal Systems Laboratory (NCSL). ETA 1400. NCSL/OIC will be Lt. Cmd. Parker. Telephone - 904/234-4362.
 - July 19, 1973 - Remain in port. Install Shadowgraph and Skylab equipment under Party Chief supervision. Project personnel will embark vessel. Accommodations for personnel have been arranged aboard vessel.
 - July 20, 1973 - Depart NCSL at 1400 for Shadowgraph shakedown cruise. Cruise track and operational plans will be supplied to Captain of OREGON II prior to mission operations by party chiefs. Vessel will return to NCSL. ETA NCSL TBD.

July 21, 1973 - Depart NCSL at time TBD. Continuance of shakedown activities. Operations will cease at 1800, and vessel return to port. ETA NCSL TBD.

July 22, 1973 - In port at NCSL. Rendezvous with R/V BOWERS. Shake-down cruise debriefing and make preparation for T&E cruise in conjunction with R/V BOWERS. Furnish cruise plan to Captain.

July 23, 1973 - Depart NCSL at 1300, along with R/V BOWERS for Shadowgraph T&E. Vessel will return to NCSL. ETA NCSL TBD.

July 24 thru August 2, 1973 - Depart NCSL at time TBD. Continuance of Shadowgraph T&E. Mission operations will cease at 1900 on August 2, and vessel will then immediately depart for Skylab test area at a speed of 12 knots. Estimated cruise time to Station 72 is 16 hours.

July 27, 1973 - Return to Pascagoula. ETA TBD. Depart on morning of 28th; time TBD.

SKYLAB OPERATIONS

1. Mission Time Frame: August 3 thru 5, 1973.
2. Area of Activity: The test site is a triangular area in the N.E. Gulf of Mexico and bounded by coordinates 30°16'N, 86°51'W; 29°18'N, 85°47'W; and 29°21'N, 87°56'W (Plan A). Plan B coordinates are: 30°16'N, 86°51'W, 28°52'N, 87°24'W; and 28°50'N, 86°19'W.
3. Mission Port: U.S. Naval Coastal Systems Laboratory (NCSL), Panama City, Florida. Telephone - 904/234-4362. Vessel berthing facilities have been arranged.
4. Project Personnel: Same as for the Shadowgraph T&E.
5. Mission Purpose: Serve as a sea truth acquisition platform occupying predetermined oceanographic stations in support of the NMFS/FEL ongoing Skylab Project being conducted in the N.E. Gulf of Mexico. Act as a contact point when fish are hooked prior to and played after 1500. Provide cold storage for gamefish. Provide communications to relay tournament information and maintain a log of activity.
6. Communications: The OREGON II will monitor 2638 KHz, and VHF Channel 16, and relay messages on 2638 KHz. Communications with the Command Vessel (R/V ERL) will be on 2638 KHz.
7. Vessel Designation: For purposes of this mission, the R/V OREGON II is designated as "Boat 4" among the nine participating oceanographic vessels. It will also be referred to as the "O₂" or the "Committee Boat".
8. Foul Weather Contingency: In the event of foul weather of sufficient magnitude to seriously hamper vessel operations, the OREGON II will head for the U.S. NCSL at Panama City, Florida. Berthing accommodations for this possible contingency have been arranged.

9. Mission Constraints:

- (1) The OREGON II will occupy Station 43 at 1200 on August 5 during the Skylab overpass, and same Station and time on August 4.
- (2) The vessel will be supplied with four orange smoke signal devices to be deployed as follows: The first signal is to be set off on signal from the R/V ERL; the second, four minutes later, on both 4 and 5 August.
- (3) On August 4 complete sea truth stations and be on Station 53 at 1930 to take on gamefish from fishermen. Fish labeling and materials for same will be supplied by the fishermen and OREGON II personnel. Assistance on fish transfer will be required from OREGON II personnel.

10. Operations Schedule:

August 2, 1973 - Complete Shadowgraph operations and depart test area station $28^{\circ}32.5'N$, $90^{\circ}50'W$ at 1900. Proceed at 12 knots to Station 72 ($28^{\circ}52.5'N$, $87^{\circ}20.5'W$).

August 3, 1973 - Arrive Station 72 at 1100 and commence oceanographic station measurement sequence enroute to test site. Station sequence as follows:

<u>Station No.</u>	<u>Coordinates</u>	<u>Begin Station</u>	<u>End Station</u>
72	$28^{\circ}52.5'N$, $87^{\circ}20.5'W$	1100	1130
73	$29^{\circ}01'N$, $87^{\circ}14'W$	1230	1300
74	$29^{\circ}09.5'N$, $87^{\circ}09.5'W$	1400	1430
75	$29^{\circ}18.5'N$, $87^{\circ}05'W$	1530	1600
53	$29^{\circ}30'N$, $86^{\circ}57.5'W$	1730	1800

Purpose of taking these stations is to determine the existence and approximate location of distinct water masses primarily thru water color, SST^o and/or surface S^o/oo measurements; however, complete oceanographic stations will be taken at each location.

At 1800, on Station 53, the OREGON II will relay oceanographic information to the R/V ERL on 2638 KHz.

August 4, 1973 - Commence oceanographic station sequence at 0700 on Station 53 according to the following schedule:

<u>Station No.</u>	<u>Coordinates</u>	<u>Begin Station</u>	<u>End Station</u>
53	$29^{\circ}31'N$, $86^{\circ}57.5'W$	0700	0730
52	$29^{\circ}24'N$, $86^{\circ}58.25'W$	0830	0900
71	$29^{\circ}17.5'N$, $86^{\circ}59'W$	1000	1030
43	$29^{\circ}23.5'N$, $86^{\circ}45.5'W$	1200 (Flyover)	1230
42	$29^{\circ}28.6'N$, $86^{\circ}51'W$	1330	1400
53 (Repeat)	$29^{\circ}30'N$, $86^{\circ}57.5'W$	1500	1530
52 "	$29^{\circ}24'N$, $86^{\circ}58.25'W$	1630	1700
71 "	$29^{\circ}17.5'N$, $86^{\circ}59'W$	1800	1830
53 "	$29^{\circ}31'N$, $86^{\circ}57.5'W$	1930	2000

The vessel will remain at Station 43 (Flyover) until instructed to continue station sequence by the R/V ERL. Communications will be on 2638 KHz between 1200 and 1230. The vessel will overnite at Station 53, and accept labeled fish for cold storage commencing at 1930.

August 5, 1973 - At 0700 on Station 53 commence oceanographic station sequence according to August 4 Schedule. Repeat same stations, but delete last Stations 52 and 71. Return to and re-take Station 53.

After completion of Station 53 at 1530, stay till 1700 to offload fish as arranged; the OREGON II will proceed to Panama City after advising the R/V ERL of same. ETA Panama City 2300. LEC personnel will pick up samples at Panama City trailer. A truck with cooler and dry ice will transfer samples from OREGON II to the trailer.

Record position at time of Skylab overpass. Exact time is TBD, after 28 July, and will be given by R/V ERL.

Mission Complete.

August 6, 1973 - R/V OREGON II will depart Panama City between 0100 and 0300 for rendezvous with R/V BOWERS to continue Shadowgraph T&E.

OPERATIONS PLAN FOR THE R/V BOWERS
FROM JULY 23 THRU AUGUST 9, 1973

SHADOWGRAPH AND SKYLAB PROJECT PARTICIPATION

SHADOWGRAPH OPERATIONS

1. Mission Time Frame: July 22 thru August 9, 1973.
2. Area of Activity: Northern Gulf of Mexico, off Panama City, Florida; Mobile Bay and Louisiana Coast near mouth of Mississippi River.
3. Mission Port: U.S. Naval Coastal Systems Laboratory (NCSL), Panama City, Florida. Telephone - 904/234-4362. Vessel berthing facilities have been arranged.
4. Project Personnel:
 - Robert Cummings - NMFS, RUFAS Operator
 - Shelby Drummond - NMFS, Field Party Chief
 - Jim Barrett - NMFS, RUFAS Operator
 - David Sutherland - NMFS, RUFAS Operator
 - Harold Hudson - NMFS, RUFAS Operator
 - Lt. Larry Keister - NOS, RUFAS Operator
5. Mission Purpose: Test and evaluate the Shadowgraph System in selected areas of the N.E. Gulf of Mexico under the supervision of NMFS/FEL. The NMFS Vessel, R/V OREGON II, will also participate during the same time frame.
6. Communications: Radio communications between the R/V BOWERS and NCSL will be on _____. Communications between the R/V BOWERS and the R/V OREGON II will be on 2638 KHz.
7. Mission Constraints: Availability of the R/V BOWERS on 4 and 5 August for Skylab ops.
8. Operations Schedule:
 - July 22, 1973 - Arrive Panama City, Florida, U.S. Naval Coastal Systems Laboratory (NCSL). ETA 1400 July 22, 1973. NCSL/OIC will be Lt. C.M. Parker; telephone - 904/234-4362. Install Shadowgraph and Skylab equipment under Party Chief supervision. Accommodations for personnel and vessel berthing have been arranged. Rendezvous with R/V OREGON II. Furnish cruise plan to Captain by Party Chief.
 - July 23, 1973 - Depart NCSL at 1300, along with R/V OREGON II for Shadowgraph T&E. Vessel will overnite at sea.

July 24, 1973 - Continuance of Shadowgraph T&E. Mission operations will cease on or about 1900 on August 2, and vessel will immediately depart for Skylab test area at a speed of 9 knots. Estimated cruise time to Station 76 is 18 hours.

SKYLAB OPERATIONS

1. Mission Time Frame: August 3 thru 5, 1973.
2. Area of Activity: The test site is a triangular in the N.E. Gulf of Mexico and bounded by coordinates 30°16'N, 86°51'W; 29°18'N, 85°47'W; and 29°21'N, 87°56'W (Plan A). Plan B coordinates are: 30°16'N, 86°51'N; 28°52'N, 87°24'W; and 28°50'N, 86°19'W.
3. Mission Port: U.S. Naval Coastal Systems Laboratory (NCSL), Panama City, Florida. Telephone - 904/234-4362. Vessel berthing facilities have been arranged.
4. Project Personnel: Same as for Shadowgraph T&E.
5. Mission Purpose: Serve as a sea truth acquisition platform occupying predetermined oceanographic stations in support of the NMFS/FEL ongoing Skylab Project.
6. Communications: The R/V BOWERS will monitor 2638 KHz, CB Channel 13 and VHF Channel 16, and relay messages on 2638 KHz to the R/V ERL.
7. Vessel Designation: For purposes of this mission, the R/V BOWERS will be designated as "Boat 9" among the nine participating oceanographic vessels. It will also be referred to as the "BOWERS".
8. Mission Constraints:

After completion of Station 68 on 5 August, the vessel will rendezvous with the R/V ERL at Station 41 at 1700 to transfer filters, samples, and equipment to the E/V ERL.

Record position at time of Skylab overpass on August 5. Time of overpass TBD, and will be given when known.
9. Foul Weather Contingency: In the event of foul weather of sufficient magnitude to seriously hamper vessel operations, the R/V BOWERS will head for Pensacola, Florida and captain will notify Command Center (Destin) of port location.
10. Operations Schedule:

August 2, 1973 - Complete Shadowgraph operations and depart test area to Station 28°32.5'N, 90°50'W at 1900. Proceed at 9 knots to Station 76 (29°07'N, 87°55.5'W). ETA Station 76 at 1300 on August 3.

August 3, 1973 - The R/V BOWERS enroute to Skylab test site. While enroute, the vessel will take oceanographic stations at the following locations:

<u>Station No.</u>	<u>Coordinates</u>	<u>Begin Station</u>	<u>End Station</u>
76	29°07'N, 87°55.5'W	1300	1330
77	29°11.5'N, 87°42'W	1500	1530
78	29°16'N, 87°33'W	1630	1700
79	29°20'N, 87°24'W	1800	1830
80	29°22'N, 87°15.5'W	1930	2000

Purpose of taking these stations is to determine the existence of, and approximate, the locations of distinct water masses by either water color, SST^o and/or surface S^o/oo changes; however, complete oceanographic stations will be taken at all locations.

The R/V BOWERS will contact the R/V ERL between 1800 and 1830 (Station 79) to relay oceanographic information. Radio communications will be on 2638 KHz.

After completion of Station 80, the vessel will proceed to Station 70 (29°45.9'N, 86°44.5'W) and overnite.

August 4, 1973 - Commence oceanographic station sequence at 0700 on Station 70 according to the following schedule:

<u>Station No.</u>	<u>Coordinates</u>	<u>Begin Station</u>	<u>End Station</u>
70	29°45.9'N, 86°44.5'W	0700	0730
69	29°40.2'N, 86°50.7'W	0830	0900
68	29°28.3'N, 87°03.5'W	1030	1100
67	29°22.3'N, 87°10.0'W	1200	1230
66	29°16.5'N, 87°16.5'W	1330	1400
67	29°22.3'N, 87°10.0'W	1500	1530
68	29°28.3'N, 87°03.5'W	1630	1700
69	29°40.2'N, 86°50.7'W	1800	1830
70 (return)	29°45.9'N, 86°44.5'W	No Station	

August 5, 1973 - At 0700 on Station 70 commence oceanographic station sequence according to August 4 schedule with the following exceptions:

- (1) Station 68 at 1630 will be the last station. Do not proceed to Stations 69 and 70. Advise R/V ERL of last station completion.
- (2) After completion of Station 68, the R/V BOWERS will rendezvous with ERL at Station 41 at or about 1700 to offload samples, filters and equipment. Mission complete.

GAMEFISH/OCEANO
REQUIREMENTS

- FISHING/OCEANO SAMPLING KIT
- INSTRUCTIONS ON DATA SHEETS
- INSTRUCTIONS ON SEA TRUTH
MEASUREMENTS

FISHING/OCEANO SAMPLING KIT

Kits have been put together from FEL and ERL sources for use by gamefish samplers who will embark on gamefishing boats during 4, 5 August for the purpose of obtaining environmental data concurrent with fish catches.

Once issued to the user at FEL/MTF, the contents, care and use of the items will become the responsibility of the user. All equipment, acquired samples, and data logs, with the exception of irreparable and/or lost items, will be returned to FEL by the user as soon as feasible after termination of the field operations.

The equipment contents of each kit are as follows:

<u>NO. OF ITEMS</u>	<u>ITEM DESCRIPTION</u>
1	Thermometer Enclosure, Tubular Bucket Type, Grey PVC, with Nylon Attachment Line
3	Thermometers, Glass Type, White Back, 0°-50°C, 0.1°C Increments. Includes: <ul style="list-style-type: none">a. One for bucket thermometer enclosure,b. One for air temp. measurements,c. One spare All thermometers are interchangeable.
1	Bucket, Plastic, with handle and nylon line attached, 2 Gal. Vol.
1	Secchi Disc, White Painted Aluminum, 12 in. dia., with 5 lb. weight attached, and 150 ft. of nylon line marked in one ft. increments.
15	Bottles, White Translucent Polyethylene, with caps, one pint vol., for S ^o /oo water sample.
1	Clip-board and pencil
1	Roll, Tape, Black Plastic for sealing caps of Sample Bottles.
1	Forel-Ule Water Color Scale Comparator, contained in plastic box enclosure with instructions.

NO. OF ITEMS

ITEM DESCRIPTION

1	Cooler (or equivalent), for equipment and water sample storage and transport.
1	Sample Bottle Marker

The following items are not part of the sampling kit, but are personal item suggestions for your TDY aboard your assigned vessel.

1. Sunglasses or "Clip-Ons", polaroid type preferred.
2. Long-Brim Cap
3. Sun Tan Lotion
4. Pocket Knife with Sharp Blade
5. Lunch and Liquid Refreshment (Packed night before)
6. Spare Pencils
7. Notebook, Pocket size
8. Extra Cigaretts, matches
9. Deck sneakers (MANDATORY)
10. Long Sleeve Shirt
11. Wind Breaker Jacket
12. Band-Aids
13. Dramamine or Equivalent
14. Camera with film
15. Spare Prescription Glasses
16. Prescription and/or non-prescription drugs as required
17. Canvas Bag for personal items

INSTRUCTIONS FOR COMPLETING DATA SHEETS

SHEET 1

Headline Info.: Record boat name and your name as observer. No entry required for RS-5 Cal.: Date/Time or Page Numbers.

<u>Column</u>	<u>Parameter</u>	<u>Remarks</u>
1-2	Station No.	Record fishing square number.
3	None	Delete - no record.
5-8	Date	Record Day: 01-31 in Col. 5-6. Record Month: 01-12 in Col. 7-8.
10-13	Time	Record local time (CDT), 24 hr. clock of station start.
15-18	Water Temp.	Record °C to nearest 0.1°C. Use bucket thermometer.
20-23	Chlor. Samp.	Delete - no record.
25-29	Salinity	Delete, but leave blank - Do not mark.
31-34	Air Temp.	Record °C to nearest 0.1°C. Use unclad thermometer.
36-40	Humidity	Delete - no record.
42-44	Wind Dir.	Record estimated direction in cardinal points. Ex: N, NE, SSE.
46-47	Wind Speed	Record estimated speed to nearest knot.
49-51	Secchi vis.	Record to nearest foot.
53-54	Sea State	Record to nearest foot.
56-58	Depth	Record if available to nearest fathom from onboard fathometer. If not available, delete but do not mark.
60-62	Sample No.	Record consecutively starting with one. Record sample no., square no., date and time of acquisition on bottle. Start new sequence, beginning with one on next day.
64-65	Forel-ule color	Use Forel-ule scale, and convert Roman numerals to Arabic numbers and record. Select nearest color value.

67-71	XBT	Delete - no record.
73-80	Remarks	As required. Use back sheet if necessary.

SHEET 2

Headline Info.: Record boat name and your name as observer. No entry required for pages.

<u>Column</u>	<u>Parameter</u>	<u>Remarks</u>
1-2	Station No.	Record fishing square number
3	None	Delete - no record
5-8	Date	Record Day: 01-31 in Col. 5-6. Record Month: 01-12 in Col. 7-8.
10-13	Time	Record local time (CDT), 24 hr. clock of station start.
15-28	Chlorophyll	Delete - do not record.
30-33	Carotenoids	Delete - do not record.
35-39	Atmos. Press.	Record if available from onboard barometer. If not available, delete but do not mark.
41-44	Visibility	Record estimate to nearest 0.5 N.Mi.
46-47	Clouds over Boat	Record % of cloud cover to nearest 10% as observed directly over boat.
49-50	Clouds over Area	Record % of cloud cover to nearest 10% in sky from horizon to horizon.
52-53	Cloud Type	Record identification using NWS letter code.
55	Precipitation	Record Number 1 (one) for Yes, and 0 (zero) for No.
56-58	None	Delete - no record
60-80	Remarks	As required, use back sheet if necessary.

INSTRUCTIONS FOR TAKING SEA TRUTH MEASUREMENTS

Observations will be taken for each two hour period ending at 1100, 1300 and 1500 except when fish are caught, observations will be obtained as near concurrently to time of hooking as is feasible and observations at the end of that two hour period may be omitted. Observations are to be obtained on a basis of no interference with fishing.

The Priority-of-Measurement sampling/data recording sequence is as follows:

- | | |
|--|--------------------------------------|
| 1. Station Number | 9. Sea State |
| 2. Date | 10. Air Temperature |
| 3. Time-Station Start | 11. Cloud Data |
| 4. Water Temperature | 12. Visibility |
| 5. S ⁰ /oo Sample & Numbering | 13. Atmospheric Pressure (If Avail.) |
| 6. Secchi Depth (Special Case) | 14. Depth (If Avail.) |
| 7. Forel-Ule Color | 15. Precipitation |
| 8. Wind Direction & Speed | 16. Remarks and Notes |

During the course of sampling, situations may arise to disrupt the Priority-of-Measurement sequence. In this regard, you are to modify the sequence to accommodate the situation. However, any attempt to modify the "Technique-of-Sampling" for any given parameter is to be avoided.

Modifications to the sampling technique may render the parameter data either incomplete and/or invalid. Any deviations, compromising situations, or other events (including unusual physical and/or biological phenomena) effecting sampling procedures, or of possible interest to project participants, is to be recorded with pertinent details.

Three sets of the Oceanographic Field Measurements Data Sheets are supplied. Use one set per day. The third set is a spare.

Kits and data sheets, including any loose notes, are to be put into the manila envelope (supplied) and returned to FEL at MTF, as soon as feasible after completion of the entire field operation. Printed materials, other than the data sheets, may be retained for your records and future reference.

1. STATION NUMBER - Record the fishing square number in which your vessel is located at the time of sampling.
2. DATE - Record the date of sampling per sample acquisition.
3. TIME - Record the local time (CDT - 24 hour clock) of start of sampling period. Record end of sampling period in remarks column.
4. WATER TEMPERATURE - Utilize the PVC bucket thermometer device. Tether the free end (on railing if avail.) of the attached line. Deploy the unit overboard. Immerse the entire unit (with thermometer inside) to just below the water's surface. Keep immersed for approximately 30-45 seconds to normalize the thermometer. Then bring aboard (avoid side of hull) without spilling contained water, and read temperature to nearest 0.1°C. Record this value. Dispose of contained water and set unit aside (shade area) until next station. If you are unsure of your reading repeat the procedure. Do not sample near exhaust.
5. S ‰ SAMPLE AND BOTTLE NUMBERING - Have ready the two gallon bucket (tethered) and a plastic sample bottle. On station, fill the bucket with surface water, rinse, and discard. Re-fill the bucket with surface water and bring on deck. Take the pint plastic bottle, uncap, and partially fill the bottle by immersing it into the bucket water. Shake well. Discard this rinse water over the vessel's side. Do not empty into bucket. Then completely immerse the bottle into the bucket water, remove, dry, and securely cap. Tape the cap to the

bottle with a few turns of the supplied tape. Record station number (sq. no.), time, bottle number and date on data sheets and on the sample bottle. To record info on bottle, use ball point pen and write on masking tape according to the following format:

Sq. No. _____ Sample No. _____
Time _____ Date _____

6. SECCHI DEPTH

NOTE: To be taken if situation and time permits.

The 12-inch disc provided is attached to a line having 1 foot length marks. Actual depth is indicated every five feet. When determining depth readings note the depth indicated immediately above the water surface and subtract the number of foot markers to the water surface.

Example: 80 minus 3 = 77 feet

The disc should be slowly lowered from the shaded side of the boat to a depth where it is just perceptible, and the depth noted to the nearest 0.5 foot. Continue lowering until the disc is no longer visible, then slowly raise the disc until it is again barely visible and note the depth of this point. Average the two readings and record the depth on the Field Measurements Data Sheet. If depth is beyond 100 feet cross out existing decimal point and record as necessary to indicate proper depth. The Secchi measurement should only be taken if time and the fishing situation permits. The vessel must be stopped during the sampling procedure. Remove sunglasses when taking a reading.

7. FOREL-ULE COLOR

Utilize the color comparator scale provided. Complete instructions are provided with each comparator. However, a brief synopsis follows:

Place the glass cylinders in the slots provided within the FU Color Device. Hold the FU Color Device at arms length and point directly

at the water's surface on the shady side of the boat. Look through the cylinders toward the surface and match the water color to the closest color on the FU Color Device. Convert this Roman Numeral to an Arabic number and record on the Data Sheet.

8. WIND DIRECTION AND SPEED

Estimate and record direction wind is coming from according to cardinal points, i.e., N, NE, SSE. Estimate and record wind speed to the nearest knot.

9. SEA STATE

Estimate to the nearest foot, the distance between bottom of a given wave trough and its crest. Record this value.

10. AIR TEMPERATURE

Utilize an unclad thermometer and take reading on shady side and as near the water as possible. Allow 30-45 seconds for thermometer to normalize prior to reading. Utilize the same thermometer for all air temperature measurements. Do not mix thermometers. Read to nearest 0.1°C and record. Stow thermometer in a safe area, preferably in the shade.

11. CLOUD DATA

Utilize the cloud type identification document and record type of clouds (letter code) over the vessel. Estimate, to the nearest 10%, the amount of cloud cover over the boat, and over the area. Record these values.

12. VISIBILITY

Estimate to the nearest 0.5 N. Mi., and record horizontal visibility, e.g., haze conditions, over the water.

13. ATMOSPHERIC PRESSURE

If an on-board barometer is available, read value to nearest tenth of an inch, and record. Delete measurement if unavailable.

14. DEPTH

If onboard fathometer is available and capable of pulsing to bottom, read value to nearest fathom and record. Delete measurement if unavailable.

15. PRECIPITATION

If raining record the number "1"; if not raining, record the value zero.

16. REMARKS AND NOTES

Enter where applicable.

MISSION OPERATIONS
PLAN

- MISSION
- COMMUNICATIONS
- AIRCRAFT OPERATIONS
- BOAT OPERATIONS

APPENDIX G

Operating Plan

Mission #075

Oceanic Gamefish and Monitoring Mission,
Skylab Experiment #240

July 17, 1973

Mission 075 Operating Plan

Table of Contents

Section I	Mission
Section II	Communications
Section III	Aircraft Operation
Section IV	Boat Operations

Section I. Mission

The objective of this mission is for the investigation to establish relationship between aircraft and satellite acquired environmental data and the distribution of gamefish in the Northeastern Gulf of Mexico. Skylab/EREP, aircraft and surface vessels will be utilized to simultaneously acquire oceanographic, fishery and relevant meteorological data within a test area site south of Pensacola, Florida. The site is a triangular area in the N.E. portion of the Gulf of Mexico bounded by the coordinates $30^{\circ}16'N$, $86^{\circ}51'W$; $29^{\circ}18'N$, $85^{\circ}47'W$; $29^{\circ}21'N$, $87^{\circ}56'W$ and encompasses a total area of 3,200 sq. nautical miles.

The Earth Resources Laboratory will acquire the surface and remote oceanographic data, analyze and prepare the data as a basic set of environmental information which best describes the oceanographic parameters in the test site, which may then be correlated with the gamefish data acquired by NMFS.

Section II. Communications Center

1. A radio and operations center will be established in a trailer at Destin, Fla., on Aug. 3, 1973. Two radios, 6.982 mhz frequency and 27.575 mhz frequency, along with a land line telephone will be operational and manned 24 hours per day for the duration of the mission Aug. 3, 4, and 5, 1973.
2. Communication with the ERL aircraft will be conducted from the ERL Destin, Fla. radio and communications center.
3. The ERL boat will be the center boat for communications to the other 8 participating oceanographic boats. The ERL will receive instructions from the ERL communication center and relay same to the other boats via marine radio 2638 khz.
4. In case of a boat emergency Coast Guard is available on land line Mobile, Ala., unit 205-438-3506 as an alternate Santa Rosa unit 904-932-3711. Coast Guard radio - VHF/FM channel 16 marine AM 2182 KHZ.
5. The communications center will be manned by the following personnel:
 1. Lee Tilton NASA/ERL
 2. W. Stevenson NOAA/NMFS
 3. H. Adams LEC
 4. Gene Zetka, NASA/ERL
6. The communications operations center will advise of go/no go conditions on Aug. 3, 1973, at 1900 and will determine whether plan A or plan B is to be used on Aug. 4 & 5.
7. Mr. H. Adams will contact all boat skippers on Aug. 3 and advise of go/no go conditions. On Aug. 4, Mr. H. Adams will contact the Boat #1, the ERL of go/no go conditions and the plan that is to be implemented. The ERL boat will transmit the same messages to the other 8 boats.

8. Information centers (trailers) for communications, activity coordination, will be located in the following areas:
- (a) Destin, Fla., East Pass Bridge Rodeo Fishing Pier - Communications and Operations Center. Phone 904-837-2523 and 904-837-2613.
(Rocky Farragut)
 - (b) Pensacola, Fla., at Rod & Reel Marina. Phone 904-453-1278 and 904-453-1279. (Joe Bettens)
 - (c) Panama City, Fla., at Capt. Anderson Marina - Phone 904-234-2736 and 904-234-2740. (John Brocks)

Section III. Aircraft Operations (Beech)

1. Aircraft with compliment of sensors and cameras will depart on Aug. 4, 1973, from airport at 0800 and land for refueling at Eglin AFB, Fla. at approximately 0930 hour.
2. The Beech aircraft will depart at approximately 1115 hours and start line #1 at approximately 1130 hrs. and continue the mission as per the attached schedule.
3. Data acquisition will be accomplished as per the mission request for ERL-1 aircraft dated 3 July, 1973 revision #2.
4. Radio communication will be on the Swan 6.9825 mhz radio, back up will be 27.575 mhz.
5. Ground truth boat will disperse orange smoke bombs at approximately 1155 hour, these will burn for approximately 10 minutes.
6. Flight missions are scheduled for Aug. 4 & 5, 1973. LEC crew is to obtain instructions on which plan is to be implemented for the flight.
7. After completion of line #3 on Aug. 5, 1973, aircraft will return to Eglin AFB, Fla., refuel and return to starting airport.

Section III. Aircraft Operations

Based on a ground speed of 160 kts., the aircraft should be at locations shown below at T plus XX minutes.

Line #1 Start = T plus 0 Min.

Location 37 = T plus 11 min.
Location 38 = T Plus 15 min.
Location 39 = T Plus 18 min.
Location 40 = T Plus 22 min.
Location 41 = T Plus 33 min.
Location 42 = T Plus 37 min.
Location 43 = T Plus 40 min.
Line #1 Stop = T Plus 42 min.

Line #2 Start = T Plus 1 hour

Location 44 = T Plus 1 hour 2 min.
Location 45 = T Plus 1 hour 6 min.
Location 46 = T Plus 1 hour 10 min.
Location 47 = T Plus 1 hour 14 min.
Location 41 = T Plus 1 hour 17 min.
Location 48 = T Plus 1 hour 21 min.
Location 49 = T Plus 1 hour 24 min.
Location 50 = T Plus 1 hour 28 min.
Location 51 = T Plus 1 hour 31 min.
Line #2 Stop = T Plus 1 hour 36 min.

Line #3 Start = T Plus 2 hours

Location 71 = T Plus 2 hours 3 min.
Location 52 = T Plus 2 hours 8 min.
Location 53 = T Plus 2 hours 10 min.
Location 41 = T Plus 2 hours 14 min.
Location 54 = T Plus 2 hours 18 min.
Location 55 = T Plus 2 hours 22 min.
Location 56 = T Plus 2 hours 25 min.
Location 57 = T Plus 2 hours 32 min.
Line #3 Stop = T Plus 2 hours 35 min.

Section IV. Boat Operations

1. This section establishes the boat operations and schedules.
2. Listing of boats, task teams and their home phone numbers for emergency purposes.

<u>Boat</u>	<u>Name & Location</u>	<u>Task Team</u>	<u>Home Phone</u>
#1	ERL-MTF	Alex D. Peresich	Waveland, 467-7998
	ERL-MTF	Terry Lemon	Long Beach, 863-7321
	ERL-MTF	Henry Polk	Long Beach, 864-0574
	ERL-MTF	Dallas Powell	Waveland, 467-4154
#2	NoHuku, Panama City, Fl. Capt. Ernest Gardner Anderson Marina 904-769-0056	Paul Vegas	Bay St. Louis, 467-4778
		Buddy Atwell	Waveland, 467-9607
#3	Rachel Destin, Fl. Capt. Ray Green Destin Docks 904-456-1251	Tom Worthington	New Orleans, 254-0479
		Vick Lambert	Slidell, 643-4449
#4	Oregon II NMFS	Manned by NMFS	
#5	Cap'n Dustin, Orange Beach, Ala. Capt. Gaston Hunter Gulf Gate Lodge 205-981-2832	Karl Breisacher Morgan McIntosh	Slidell, 643-7010 Picayune, 798-5822
#6	Maric IV Destin, Fl. Capt. Stanley Lapinski Kelley Docks 904-837-6-16 (boat)	Dr. R. H. Cartmill	Slidell, 641-1616
		Billie Edwards	Picayune, 798-6947
#7	Blufin, Orange Beach, Al. Capt. John Stewart Gulf Gate Lodge 205-981-2832	Byron Skipper	Picayune, 798-5122
		Dillon Jarrel	Picayune, 798-6985

<u>Boat</u>	<u>Name & Location</u>	<u>Task Team</u>	<u>Home Phone</u>
#8	Kingfish II Panama City, Fl. Capt. David Munezel 904-234-6541 NOAA NMFS Sportsfishing Lab Dock.	Harold Owens James Jones Jerry Brashier	Picayune, 798-1636 Slidell, 643-8413 Waveland, 467-3056
#9	Bowers NMFS	Manned by NMFS	

3. Each boat will be equipped with the standard boat kits consisting of the following items.

Secchi Disc	3 one gallon plastic bottles
Bucket Thermometer	14 one pint plastic bottles
Sling Psychrometer	4 orange smoke flares
Forel-Ule Color Device	1 small ice chest
Std. Thermometer	1 plastic bucket
RS-5 Salinometer on ERL, Bowers & Oregon II only	1 set log sheets
Chlorophyll Filtration Sys.	1 ISCO Radiometer (on the NoHuHu and the Maric IV only.)
Supply of Micro filters	

4. On July 31, the task teams will receive an orientation on the use and operation of the equipment listed in paragraph 3.
5. Task teams will acquire the boat kits on July 31, 1973.
6. Task teams should plan to depart MTF on Aug. 3 to the respective boat harbor destinations. The task teams will be informed of go/no go condition prior to 0900 on Aug. 3, 1973.
7. In the event the mission condition Plan A is on go status the task teams will depart MTF and report to the assigned boat and load the kit equipment on the boats on Aug. 3, 1973, and arrange to be on board one hour prior to departure time on Aug. 4, 1973.

Depart Schedule, Plan A.

Boat #1 ERL	0200 departure time
Boat #2 NoHuHu	0400 departure time
Boat #3 Rachel	0500 departure time
Boat #4 Oregon II	On station
Boat #5 Cap'n Dustin	0300 departure time
Boat #6 Maric IV	0400 departure time

Boat #7 Bluefin 0500 departure time
Boat #8 Kingfish II 0300 departure time
Boat #9 Bowers On station

8. Schedule of activities, all boats should be on the first station at 0900 and start data acquisition.

Four (4) orange smoke flares will be furnished to the following boats:

Boat #1 - ERL
Boat #2 - NoHuHu
Boat #3 - Rachel
Boat #4 - Oregon II
Boat #5 - Cap'n Dustin
Boat #6 - Maric IV

Plan A
Boat Operations

Boat #1 - ERL

On Station 41 at 0900 and will acquire data at 1 1/2 hour intervals and maintain radio checks with the other boats and communication and operations center. Marine radio 2638, CB radio channel 13, VHF 16.

1157 - Deploy 1st. orange smoke flare Aug. 4

1201 - Deploy 2nd. orange smoke flare Aug. 4

1157 - Deploy 3rd. orange smoke flare Aug. 5

1201 - Deploy 4th orange smoke flare Aug. 5

1830 - Station 41 depart for home port or anchor in shallow waters.

The ERL on Aug. 5, 1973, will arrange to pick up samples from the Bowers after 1830, providing sea conditions are conducive for transfer of samples, otherwise the Bowers will put into Pensacola Harbor and contact the command center at Destin.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #2 - NoHuHu

0500 - Radio check while enroute - 2638 KHZ

0900 - Depart Station 44 - acquire data and radio check

0930 - Depart station 44

1030 - Station 45 - acquire data and radio check

1100 - Depart Station 45

1155 - Station 46 - acquire data and radio check

1211 - Station 46 - deploy 1st. orange smoke flare and acquire data,
note wind direction and boat heading

1215 - Station 46 - deploy 2nd. orange smoke flare and acquire data

1230 - Depart station 46

1330 - Station 47 acquire data and radio check

1400 - Depart station 47

1500 - Station 46 acquire data and radio check

1530 - Depart station 46

1630 - Station 45 acquire data and radio check

1700 - Depart station 45

1800 - Station 44 acquire data and radio check

1830 - Depart station 44 for overnite anchor or home port

TASK TEAM - Paul Vegas
Buddy Atwell

The task team will obtain dry ice from the Panama City trailer
at the Anderson Marina, and return the samples and test kits
to LEC at MTF.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #3 - Rachel

- 0500 - Radio check while enroute
- 0900 - Station 57 acquire data and radio check
- 0930 - Depart station 57
- 1030 - Station 56 acquire data and radio check
- 1100 - Depart station 56
- 1155 - Station 55 acquire data and radio check
- 1230 - Depart station 55
- 1330 - Station 54 acquire data and radio check
- 1352 - Deploy 1st. orange smoke flare
- 1356 - Deploy 2nd. orange smoke flare
- 1400 - Depart station 54
- 1500 - Station 55 acquire data and radio check
- 1530 - Depart station 55
- 1630 - Station 56 acquire data and radio check
- 1700 - Depart station 56
- 1800 - Station 57 acquire data and radio check
- 1830 - Depart station 57 for overnight anchorage or home port

TASK TEAM - Tom Worthington
Victor Lambert

The task team will obtain dry ice from the Destin trailer at the Rodeo Fishing Pier and return samples and boat kit to LEC at MTF.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #4 - Oregon II

0700 - Station 53, acquire data and radio check

0730 - Depart station 53

0830 - Station 52, acquire data and radio check

0900 - Depart station 52

1000 - Station 71, acquire data and radio check

1030 - Depart station 71

1145 - Station 43, acquire data and radio check

1204 - Station 43, deploy 1st. orange smoke flare. Note wind direction and boats heading.

1208 - Station 43, deploy 2nd. orange smoke flare.

1230 - Depart station 43

1330 - Station 42, acquire data and radio check

1400 - Depart station 42

1500 - Station 53 acquire data and radio check

1530 - Depart station 53

1630 - Station 52 acquire data and radio check

1700 - Depart station 52

1800 - Station 71 acquire data and radio check

1830 - Depart station 71 for station 53 overnight stay or return to Panama City on Aug. 5, 1973

NOTE: 1. On Aug. 3, 1973, the Oregon II will take oceanographic data at selected stations while enroute to test site area and report findings to the ERL on radio 2638 KHZ at 1800. ERL will report same to command station.

2. The Oregon II samples and remaining fish will be picked up by NMFS personnel on 5 August at the NCSL dock, and transported to the trailer. LEC personnel will then transport samples to MTF.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #5 - Cap'n Dustin

0900 - Station 51, acquire data and radio check

0930 - Depart station 51

1030 - Station 50, acquire data and radio check

1100 - Depart station 50

1200 - Station 49, acquire data and radio check

1230 - Depart station 49

1330 - Station 48, acquire data and radio check

1400 - Depart station 48

1408 - Deploy 1st. orange smoke flare

1412 - Deploy 2nd. orange smoke flare

1500 - Station 49 acquire data and radio check

1530 - Depart station 49

1630 - Station 50, acquire data and radio check

1700 - Depart station 50

1800 - Station 51 acquire data and radio check

1830 - Depart station 51 for overnight anchor or home port

TASK TEAM: Karl Breisacher
Morgan McIntosh

The task team will arrange to obtain dry ice in the local area
and return sample and boat kit to LEC at MIF.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #6 - Maric IV

0900 - Station 37, acquire data and radio check

0930 - Depart station 37

1030 - Station 38, acquire data and radio check

1100 - Depart station 38

1152 - Station 39, deploy 1st. orange smoke flare and acquire data and radio check,

1156 - Station 39, deploy 2nd. orange smoke flare

1230 - Depart station 39

1330 - Station 40, acquire data and radio check

1400 - Depart station 40

1500 - Station 39 acquire data and radio check

1530 - Depart station 39

1630 - Station 38, acquire data and radio check

1700 - Depart station 38

1800 - Station 37, acquire data and radio check

1830 - Depart station 37 for overnight anchor or home port

TASK TEAM - Dr. R. H. Cartmill
Bill Edwards

The task team will obtain dry ice from the Destin Trailer at the Rodeo Fishing Pier and return samples and boat kit to LEC at MTF.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #7 - Bluefin

0900 - Station 58, acquire data and radio check

0930 - Depart station 58

1030 - Station 59, acquire data and radio check

1100 - Depart station 59

1200 - Station 60, acquire data and radio check

1230 - Depart station 60

1330 - Station 61, acquire data and radio check

1400 - Depart station 61

1500 - Station 60 acquire data and radio check

1530 - Depart station 60

1630 - Station 59, acquire data and radio check

1700 - Depart station 59

1800 - Station 58, acquire data and radio check

1830 - Depart station 58, for overnight anchor or home port

TASK TEAM: Byron Skipper
Dillon Jarrel

The task team will obtain dry ice in the local area and return samples and boat kits to LEC at MIF.

Plan A
Schedule for Aug. 4 & 5, 1973

Boat #8 - Kingfish II

0900 - Station 65, acquire data and radio check

0930 - Depart station 65

1030 - Station 64, acquire data and radio check

1100 - Depart station 64

1200 - Station 63, deploy 1st. orange smoke flare, acquire data and radio check

1230 - Depart station 63

1330 - Station 62, acquire data and radio check

1400 - Depart station 62

1500 - Station 63 acquire data and radio check

1530 - Depart station 63

1630 - Station 64 acquire data and radio check

1700 - Depart station 64

1800 - Station 65 acquire data and radio check

1830 - Depart station 65, for overnight anchor or home port

TASK TEAM: Harold Owens
James Jones
Jerry Brashier

The task team will obtain dry ice at the Panama City trailer, collect the samples and boat kit from Oregon II, return samples and boat kits to LEC at MTF.

Plan A

Boat #9 - Bowers

0700 - Station 70, acquire data and radio check

0730 - Depart station 70

0830 - Station 69, acquire data and radio check

0900 - Depart station 69

1030 - Station 68, acquire data and radio check

1100 - Depart station 68

1200 - Station 67, acquire data and radio check

1230 - Depart station 67

1330 - Station 66, acquire data and radio check

1400 - Depart station 66

1500 - Station 67, acquire data and radio check

1530 - Depart station 67

1630 - Station 68 acquire data and radio check

1700 - Depart station 68

1800 - Station 69 acquire data and radio check

1830 - Depart station 69, for overnight anchor or home port

TASK TEAM: Manned by NMFS

The Bowers will rendezvous with the ERL and transfer samples and boat kit. Rendezvous on Station 41 on 5 August, weather permitting.

9. Time hacks will be radioed to each of the boats at 0900, 1230, and 1600 hours.
10. Data acquisition will be accomplished as per the requirements of the mission request for nine (9) sea truth boats.
11. Special consideration is to be given to the millipore filters, these are to be kept frozen after the filtration process. Upon arrival at the boats home port the filters will be packed in the small ice chest and covered with dry ice. Samples will be delivered to LEC at MTF upon return. Caution keep the samples with dry ice.
12. Each task team will collect the boat kits and return to LEC at MTF along with the completed log sheets.

Plan B
Boat Operations

The selected site is moved approximately 16 miles south from Plan A and the site is a triangular area in the N. E. Gulf of Mexico, south of Pensacola, Florida bounded by the coordinates 30°16'N, 86°51'W; 28°52'N, 87°24'W; 28°50'N, 86°19'W, and encompasses a total area of approximately 5,400 square nautical miles.

Plan B is only to be used when directed by the command operations center. The decision is to be made on August 3, 1973, at 1900.

Due to the additional travel distances, the following estimate of departure times will apply to the assigned boats on Aug. 4, 1973.

- Boat #1 ERL 0030 departure time
- Boat #2 NoHuHu 0200 departure time
- Boat #3 Rachel 0300 departure time
- Boat #4 Oregon II on station
- Boat #5 Cap'n Dustin 0100 departure time
- Boat #6 Maric IV 0200 departure time
- Boat #7 Bluefin 0300 departure time
- Boat #8 Kingfish II 0100 departure time
- Boat #9 Bowers on station

Plan B

Boat #1 - ERL

On Station 841 at 0900 and will acquire data at 1 1/2 hour intervals and maintain radio checks with the other boats and communication and operations center. Marine radio 2638, CB radio channel 13, VHF 16.

1157 - Deploy 1st. orange smoke flare Aug. 4

1201 - Deploy 2nd. orange smoke flare Aug. 4

1157 - Deploy 3rd. orange smoke flare Aug. 5

1201 - Deploy 4th orange smoke flare Aug. 5

1830 - Station 841 depart for home port or anchor in shallow water

The ERL on Aug. 5, 1973, will arrange to pick up samples from the Bowers after 1830, providing sea conditions are conducive for transfer of samples, otherwise the Bowers will put into Pensacola Harbor and contact Destin Information Center for instructions.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #2 - NoHuHu

0500 - Radio check while enroute - 2638 KHZ

0900 - Depart station 844 - acquire data and radio check

0930 - Depart station 844

1030 - Station 845 - acquire data and radio check

1100 - Depart station 845

1155 - Station 846 - acquire data and radio check

1211 - Station 846 - deploy 1st. orange smoke flare and acquire data,
note wind direction and boat heading

1215 - Station 846 - deploy 2nd. orange smoke flare and acquire data

1230 - Depart station 846

1330 - Station 847 acquire data and radio check

1400 - Depart station 847

1500 - Station 846 acquire data and radio check

1530 - Depart station 846

1630 - Station 845 acquire data and radio check

1700 - Depart station 845

1800 - Station 844 acquire data and radio check

1830 - Depart station 844 for overnite anchor home port

TASK TEAM - Paul Vegas
Buddy Atwell

The task team will obtain dry ice from the Panama City trailer at the Anderson Marina, and return the samples and test kits to LEC at MTF.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #3 - Rachel

- 0500 - Radio check while enroute
- 0900 - Station 857 acquire data and radio check
- 0930 - Depart station 857
- 1030 - Station 856 acquire data and radio check
- 1100 - Depart station 856
- 1155 - Station 855 acquire data and radio check
- 1230 - Depart station 855
- 1330 - Station 854 acquire data and radio check
- 1352 - Deploy 1st. orange smoke flare
- 1356 - Deploy 2nd. orange smoke flare
- 1400 - Depart station 854
- 1500 - Station 855 acquire data and radio check
- 1530 - Depart station 855
- 1630 - Station 856 acquire data and radio check
- 1700 - Depart station 856
- 1800 - Station 857 acquire data and radio check
- 1830 - Depart station 857 for overnight anchorage or home port

TASK TEAM - Tom Worthington
Victor Lambert

The task team will obtain dry ice from the Destin trailer at the Rodeo Fishing Pier and return samples and boat kit to LEC at MTF.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #4 - Oregon II

- 0700 - Station 853, acquire data and radio check
- 0730 - Depart station 853
- 0830 - Station 852, acquire data and radio check
- 0900 - Depart station 853
- 1000 - Station 871, acquire data and radio check
- 1030 - Depart station 871
- 1145 - Station 843, acquire data and radio check
- 1204 - Station 843, deploy 1st. orange smoke flare. Note wind direction and boats heading.
- 1208 - Station 843, deploy 2nd. orange smoke flare
- 1230 - Depart station 43
- 1330 - Station 842, acquire data and radio check
- 1400 - Depart station 842
- 1500 - Station 853 acquire data and radio check
- 1530 - Depart station 853
- 1630 - Station 852 acquire data and radio check
- 1700 - Depart station 852
- 1800 - Station 871 acquire data and radio check.
- 1830 - Depart station 871 for station 53 overnight stay or return to Panama City on Aug. 5, 1973

- NOTE: 1. On Aug. 3, 1973, the Oregon II will take oceanographic data at selected stations while enroute to test site area and report findings to the ERL on radio 2638 KHZ at 1800. ERL will report same to command station.
2. The Oregon II samples and remaining fish will be picked up by NMFS personnel on 5 August at the NCSL dock, and transported to the trailer. LEC personnel will then transport samples to MTF.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #5 - Cap'n Dustin

0900 - Station 851, acquire data and radio check

0930 - Depart station 851

1030 - Station 850, acquire data and radio check

1100 - Depart station 850

1200 - Station 849, acquire data and radio check

1230 - Depart station 849

1330 - Station 848, acquire data and radio check

1400 - Depart station 848

1408 - Deploy 1st. orange smoke flare

1412 - Deploy 2nd. orange smoke flare

1500 - Station 849 acquire data and radio check

1530 - Depart station 849

1630 - Station 850, acquire data and radio check

1700 - Depart station 850

1800 - Station 851 acquire data and radio check

1830 - Depart station 851 for overnight anchor or home port

TASK TEAM: Karl Breisacher
Morgan McIntosh

The task team will arrange to obtain dry ice in the local area and return sample and boat kit to LEC at MTF.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #6 - Maric IV

0900 - Station 837, acquire data and radio check

0930 - Depart station 837

1030 - Station 838, acquire data and radio check

1100 - Depart station 838

1152 - Station 839, deploy 1st. orange smoke flare and acquire data and radio check

1156 - Station 839, deploy 2nd. orange smoke flare

1230 - Depart station 839

1330 - Station 840, acquire data and radio check

1400 - Depart station 840

1500 - Station 839 acquire data and radio check

1530 - Depart station 839

1630 - Station 838, acquire data and radio check

1700 - Depart station 838

1800 - Station 837, acquire data and radio check

1830 - Depart station 837 for overnight anchor or home port

TASK TEAM - Dr. R. H. Cartmill
Bill Edwards

The task team will obtain dry ice from the Destin Trailer at the Rodeo Fishing Pier and return samples and boat kit to LEC at MTF.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #7 - Bluefin

0900 - Station 858, acquire data and radio check

0930 - Depart station 858

1030 - Station 859, acquire data and radio check

1100 - Depart station 859

1200 - Station 860, acquire data and radio check

1230 - Depart station 860

1330 - Station 861, acquire data and radio check

1400 - Depart station 861

1500 - Station 860 acquire data and radio check

1530 - Depart station 860

1630 - Station 859, acquire data and radio check

1700 - Depart station 859

1800 - Station 858, acquire data and radio check

1830 - Depart station 858, for overnight anchor or home port

TASK TEAM: Byron Skipper
Dillon Jarrel

The task team will obtain dry ice in the local area and return samples and boat kits to LEC at MTF.

Plan B
Schedule for Aug. 4 & 5, 1973

Boat #8 - Kingfish II

0900 - Station 865, acquire data and radio check

0930 - Depart station 865

1030 - Station 864, acquire data and radio check

1100 - Depart station 864

1200 - Station 863, deploy 1st. orange smoke flare, acquire data and radio check

1230 - Depart station 863

1330 - Station 863 acquire data and radio check

1400 - Depart station 862

1500 - Station 863 acquire data and radio check

1530 - Depart station 863

1630 - Station 864 acquire data and radio check

1700 - Depart station 863

1800 - Station 865 acquire data and radio check

1830 - Depart station 865, for overnight anchor or home port

TASK TEAM: Harold Owens
James Jones
Jerry Brashier

The task team will obtain dry ice at the Panama City trailer, collect the samples and boat kit from Oregon II, return samples and boat kits to LEC at MTF.

Plan B

Boat #9 - Bowers

0700 - Station 870, acquire data and radio check

0730 - Depart station 870

0830 - Station 869, acquire data and radio check

0900 - Depart station 869

1030 - Station 868, acquire data and radio check

1100 - Depart station 868

1200 - Station 867, acquire data and radio check

1230 - Depart station 867

1330 - Station 866, acquire data and radio check

1400 - Depart station 866

1500 - Station 867, acquire data and radio check

1530 - Depart station 867

1630 - Station 868 acquire data and radio check

1700 - Depart station 868

1800 - Station 869 acquire data and radio check

1830 - Depart station 869, for overnight anchor or home port

TASK TEAM: Manned by NMFS

The Bowers will rendezvous with the ERL and transfer samples and boat kit. Rendezvous with R/V ERL on Station 841.

9. Time hacks will be radioed to each of the boats at 0900, 1230, and 1600 hours.
10. Data acquisition will be accomplished as per the requirements of the mission request for nine (9) sea truth boats.
11. Special consideration is to be given to the millipore filters, these are to be kept frozen after the filtration process. Upon arrival at the boats home port the filters will be packed in the small ice chest and covered with dry ice. Samples will be delivered to LEC at MTF upon return. Caution keep the samples with dry ice.
12. Each task team will collect the boat kits and return to LEC at MTF along with the completed log sheets.

APPENDIX H

PERSONNEL ASSIGNMENTS

SKYLAB GAMEFISH PERSONNEL ASSIGNMENTS

REVISED July 18, 1973

FUNCTION	PENSACOLA	DESTIN	PANAMA CITY
Information Coordinating Centers (Trailers)	Joe Bettens	Rocky Farragut	John Brucks
Port Samplers	R. Parrish B. Cook	Jay Ogle J. Lockfaw	Fontaine F. Thompson
Gamefish Samplers	T. Flynn J. Benigno R. Minkler	McGill Roithmayr Fuller	T. Leming F. Wittmann J. Anderson
Public Relations	M. Herring T. Malone	A. Weeks	
Management and Data Support	P. C. Cook	<u>Mgt. A</u> <u>Mgt. B</u> Stevenson Woods Tilton Weldon Ellis Savastano	E. Pastula
Technical Observers		Rivas Piland Byrns Fret	
NASA/ERL Communication Boat Crew	Cartmill Powell Edwards Skipper Peresich Jarrel Lemon Breisacher Polk McIntosh	Adams Zetka Worthington Lambert	Atwell Vegas Jones Brashier Owens
Aircraft Beech Colliver Heath Morgan Cleveland			

H-2

APPENDIX H

APPENDIX I

ACCOMMODATIONS

APPENDIX I
ACCOMMODATIONS

Pensacola

Royal House Motel 904-456-7411
4448 Mobile Hwy.

Destin

Hospitality Inn 904-837-6172
Miracle Strip Parkway (Hwy. 98)

Fort Walton

Ramada 904-243-9161
Highway 98

Panama City

Holiday Lodge 904-234-2114
6400 W. Highway 98

PANAMA CITY

Holiday Lodge 904/234-2114

August

Atwell &	3, 4, 5
Vegas	3, 4, 5
Jones	3, 4, 5
Owens	3, 4, 5
Brashier	3, 4, 5
Pastula	3, 4, 5, 6
Wittmann	3, 4, 5
Anderson	3, 4, 5
Thompson	3, 4, 5
Laming	2, 3, 4, 5, 6

DESTIN

Hospitality Inn 904/837-6172

Farragut	2, 3, 4, 5, 6
Roithmayr	3, 4, 5
Weeks	3, 4, 5
Savastano	3, 4
Fuller	3, 4, 5
Rivas	3, 4, 5
Tilton	3, 4, 5
Zetka &	3, 4, 5
Weldon	3, 4, 5
Woods &	3, 4, 5
Stevenson	3, 4, 5

FORT WALTON
BEACH

Ramada Inn 904/243-9161

Worthington	3, 4, 5
Lambert	3, 4, 5
Adams	3, 4, 5

PENSACOLA

Royal House Motel 904/456-7411

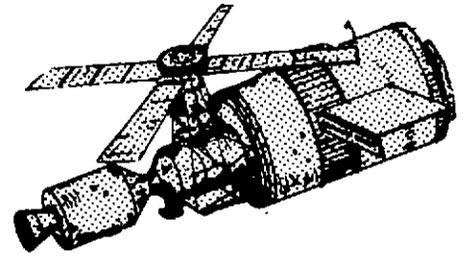
Herring	3, 4, 5
PC Cook	3, 4, 5
Flynn	3, 4, 5
Malone	3, 4, 5
Benigno	3, 4, 5
Minkler	3, 4, 5

APPENDIX J

GAMEFISH INFORMATION PACKET

- SKYLAB GAMEFISH TOURNAMENT BOOKLET
- TOURNAMENT REGISTRATION CARD
- GAMEFISH BOAT LOG
- BIOLOGICAL DATA LOG
- FISHING AREA CHART

SKYLAB GAMEFISH TOURNAMENT



1973

AUGUST 4 and 5



PENSACOLA, DESTIN, PANAMA CITY, FLORIDA



TOURNAMENT COMMITTEE

- Gin Arnold III ----- Mobile Big Game Fishing Club
- Bill Bacon ----- Destin Charter Boat Association
- Maumus Claverie, Jr. ----- New Orleans and Golden Meadow
Big Game Fishing Club
- Floyd T. Neth ----- Pensacola Big Game Fishing Club
- B. J. Putnam ----- Panama City Charter Boat
Association
- Luis R. Rivas ----- National Marine Fisheries Service

WHAT IT'S ALL ABOUT!

Sportsfishermen who are in the Northern Gulf of Mexico have the opportunity to participate in a tournament which is an integral part of a unique scientific fish-finding experiment during the manned SKYLAB 3 mission scheduled for launch in late July. A test area will be fished from the ports of Pensacola, Destin and Panama City, Florida, while the SKYLAB astronauts operate remote sensors as the satellite ground track passes through the area. Concurrently, earth survey aircraft will overfly the area obtaining photography/imagery; and oceanographic research vessels will collect sea truth data at the sampling stations.

The tournament is open to all fishermen interested in making a contribution - fish catch data - to the advancement of knowledge of big game fishing.

The voluntary cooperation of the big game

fish angler to supply the fish catch and effort data is very important to the experiment. The fish catch and effort data you collect will be used to relate the sea surface information acquired from aircraft and SKYLAB to the distribution of fish stocks. The ultimate objective of a space-fishery-oceanographic experiment of this type is to help you sportsfishermen by developing fishing forecasts similar to those given for the weather today --- applying space-age technology to the "man-on-the-boat".

This is a joint experiment of the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA).

The National Marine Fisheries Service, a NOAA element, will coordinate the experiment.

TOURNAMENT SUMMARY

- | | |
|----------------|---|
| FISHING TIME | - August 4, Saturday, 9:00 a.m. to 3:00 p.m.
August 5, Sunday, 9:00 a.m. to 3:00 p.m. |
| CHECK POINTS | - Pensacola, Rod and Reel Marina
Destin, East Pass Channel, Rodeo Dock
Panama City, Captain Anderson's Marina |
| FISHING AREA | - (See enclosed chart.) |
| ENTRY | - Submit application on enclosed entry form. |
| FEE | - None |
| CATCH DATA | - Recorded on Gamefish Log and given to port sampler at check point. |
| AWARD CEREMONY | - By invitation to participants after tournament. |
| RULES | - Provided herein under separate heading. |
| COMMITTEE BOAT | - OREGON II (See Supplementary Data) |

TOURNAMENT RULES

FISHING AREA. Eligible fish are those caught within the fishing area on the enclosed chart.

FISHING TECHNIQUE. Normal trolling techniques should be employed, utilizing any combination of rod, reel, hook and line.

WEIGH-IN. Fish must be weighed at a tournament check point.

FISHING HOURS. Fishing for the record is confined to the period 9:00 a.m. to 3:00 p.m. each day. Any fish hooked prior to 3:00 p.m. may be played until landed. The committee boat must be notified of the hookup.

DATA LOGS. Gamefish logs must be delivered to the port sampler at the check-point or telephoned to the trailers at the check points no later than 12:00 p.m.

5 August. NEGATIVE DATA IS DESIRED AND IS EXTREMELY IMPORTANT TO THE EXPERIMENT. Additional logs are available from the port samplers and the information centers.

ELIGIBLE FISH AND MINIMUM WEIGHTS

<u>Species</u>	<u>Minimum Weight</u>
Blue Marlin	None
White Marlin	None
Sailfish	None
Bluefin Tuna	50 lbs
Yellowfin Tuna	50 lbs
Wahoo	30 lbs
Dolphin	30 lbs

No fish will be eligible which in the opinion of the check point judge was not caught in accordance with tournament categories and awards. Frozen fish are automatically disqualified. The judge's decision is final.

BOAT AWARDS. The first, second and third place trophies will be given for most points accumulated during the tournament. One point per pound will be awarded for each blue marlin, white marlin, sailfish, bluefin tuna and yellowfin tuna weighed in subject to the minimum weights.

ANGLER AWARDS. First, second and third place trophies will be given for each of the eligible species weighed in subject to the above minimum weights.

CHECK POINTS.

Pensacola, Rod & Reel Marina
Destin, East Pass Channel, Rodeo Dock
Panama City, Captain Anderson's Marina

SUPPLEMENTARY INFORMATION

AWARD CEREMONY AND BANQUET.

Tournament participants will be invited by invitation from the Pensacola Big Game Fishing Club. The list of invitees will be compiled from the Gamefish Logs returned by the participants.

COMMITTEE BOAT. The NMFS OREGON II is designated as the Committee Boat. OREGON II functions are:

- 1) Act as contact point when fish are hooked prior to and played after 3:00 p.m.
- 2) Provide cooler storage of gamefish for the night of 4-5 August for boats remaining at sea overnight. Fish must be labeled prior to storage.
- 3) Act as communication relay for tournament information.
- 4) Obtain oceanographic information.
- 5) Maintain log of tournament communications.

The OREGON II schedule is:

- 1) On 4 and 5 August from 7:00 a.m. to 6 p.m., obtain oceanographic data on pre-established track in southern part of fishing area.
- 2) On the night 4-5 August, lie to at position lat. 29° 30'N long. 86° 57'W from 7:00 p.m. to 7:00 a.m.
- 3) On afternoon 5 August, lie to at the position given above from 3:00 p.m. to 5:00 p.m. for return transfer of fish.
- 4) Depart area for Panama City at 5:00 p.m. 5 August.

COMMUNICATIONS. The OREGON II will monitor 2638 kilohertz and VHF 16. Information centers will monitor 2638 kilohertz.

FLARES. Oceanographic research boats are operating in the fishing area and have been instructed to deploy smoke flares at designated times during 4-5 August. This is to indicate boat locations for aircraft photography/imagery.

OCEANOGRAPHIC VESSELS. Four Government vessels and five Government chartered vessels will be in the test area obtaining environmental sea truth data.

PATCHES, DECALS. Tournament participants may pick up patches and decals at the tournament information centers. The patches and decals will be available 2 August.

PORT SAMPLERS. Two port samplers have been assigned to each check point to assist at weigh-in, interview returning anglers and collect and complete Gamefish Logs. All oceanic gamefish raised or hooked should be reported on the gamefish boat logs for scientific purposes, although the fish may not be counted for awards.

TOURNAMENT INFORMATION CENTERS. Manned field trailers will be established at each check point 20 July through 6 August to facilitate tournament business and provide a contact point for local anglers. Entry forms and gamefish boat logs will be available. The tournament gamefish catch status will be marked on a display board. On tournament days, the port samplers may be contacted through the centers. Telephone numbers are:

Pensacola Information Center

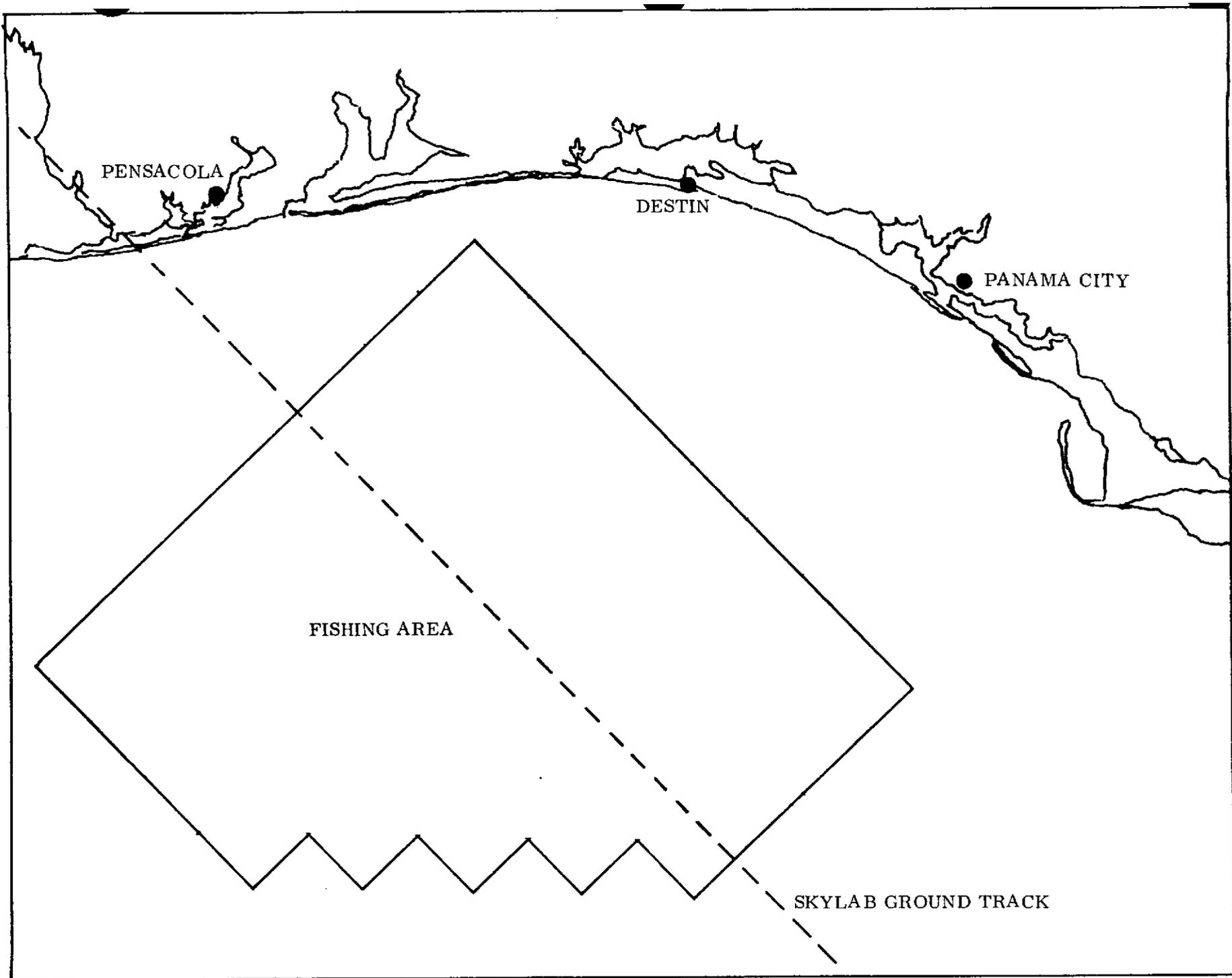
904-453-1278
904-453-1279

Destin Information Center

904-837-2533
904-837-2613

Panama City Information Center

904-234-2726
904-234-2740



Skylab Gamefish Tournament
Pensacola Big Game Fishing Club
Post Office Box 2277
Pensacola, Florida 32503

Name _____

Mailing Address _____

Street or P. O. Box

Telephone _____

City

State

Zip Code

I plan to participate in the SKYLAB GAMEFISH TOURNAMENT on

4 August Yes () No ()

5 August Yes () No ()

If you plan to participate -

Boat Captain _____ Name of Boat _____

Boat Length _____ Radio _____

Would you be willing to accommodate an observer with oceanographic sampling equipment (48 qt. ice chest)? Yes () No ()

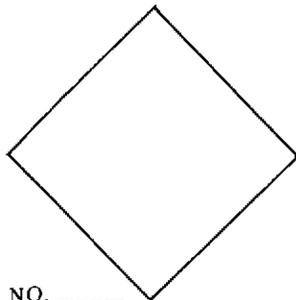
PLEASE PRINT

GAMEFISH BOAT LOG

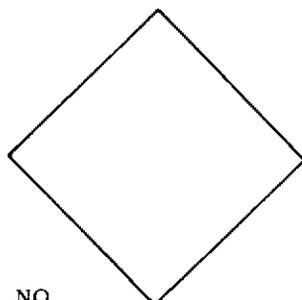
BOAT NAME _____ CAPTAIN _____ DATE _____

REF. NO.	OCEANIC GAMEFISH	TIME				BAIT	WATER COLOR	RIP, OPEN WATER, SCATTERED GRASS, DEBRIS
		RAISED	HOOKED	LOST	BOATED			
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

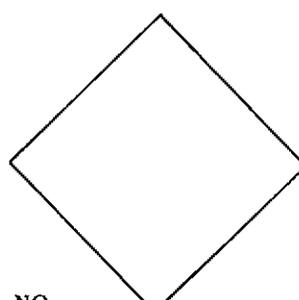
SQUARE NO.	LINES IN	LINES OUT	NO. RODS FISHED	ROD HOURS FISHED - BAIT				
				MULLET	BALLYHOO	STRIP	ARTIFICIAL	OTHER



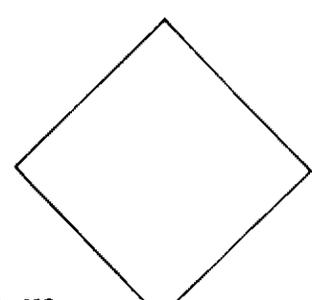
SQ. NO. _____



SQ. NO. _____



SQ. NO. _____



SQ. NO. _____

WRITE IN SQUARE NUMBER AND MARK REFERENCE NUMBER IN SQUARE WHERE FISH HOOKED, RAISED OR BOATED.

LORAN

GENERAL EXPLANATION

FREQUENT CHANNELS (indicated by a thick line)

BASIC PULSE RECURRENTS (MILES)

SPECIAL RECURRENTS (MILES)

RATES ON THIS CHART

EXAMPLE

UNITED STATES - GULF COAST

CAPE ST. GEORGE TO MISSISSIPPI PASSES

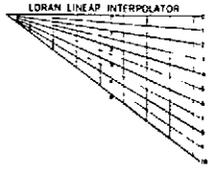
Meridian Projection
Scale 1:456,204 at Lat. 28°

SOUNDINGS IN FATHOMS AT MEAN LOW WATER

(For offshore navigation only)

Fathoming Aids to Navigation made the new soundings are not shown on this chart.

For 1500 fathoms and larger fathoms charts for side marking are not shown.



NOTICES

Information is being added to the Coast and Geodetic Survey charts and publications for the Gulf of Mexico and Caribbean Sea.

CAUTION

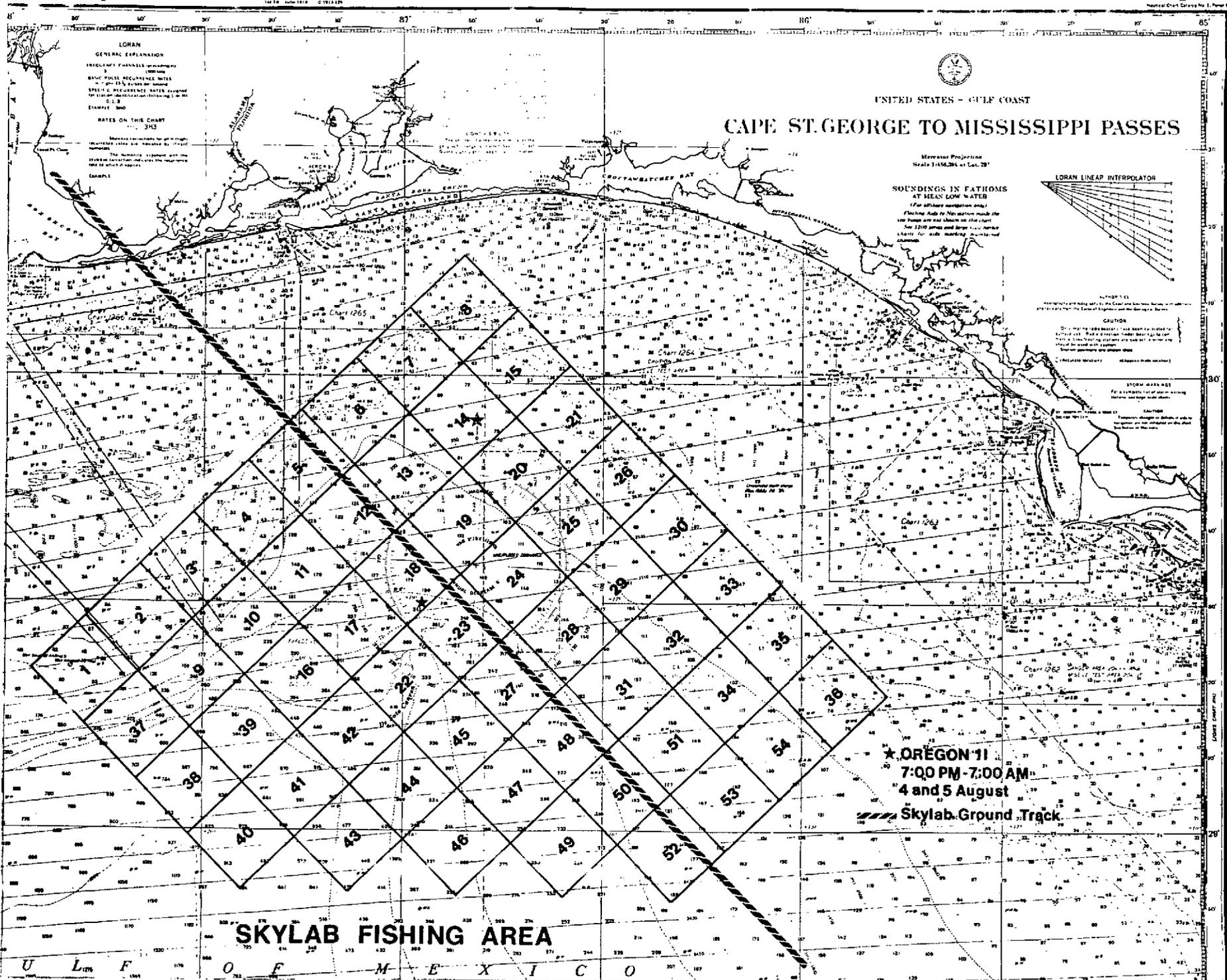
Do not use this chart for navigation unless you have the latest edition. This chart is not to be used for navigation unless you have the latest edition.

STORM WARRIOR

For a complete list of storm warning stations and their positions, see the Storm Warning Manual.

CAUTION

Do not use this chart for navigation unless you have the latest edition. This chart is not to be used for navigation unless you have the latest edition.



★ OREGON 11
7:00 PM - 7:00 AM
4 and 5 August
Skylab Ground Track

SKYLAB FISHING AREA

U L F O F M E X I C O

11-f

APPENDIX K

MISCELLANEOUS INFORMATION

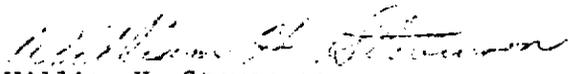


U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Mississippi Test Facility
Bay Saint Louis, Mississippi 39520

Date : July 20, 1973

Reply to Attn. of: F124

To : Skylab Project Field Participants

From : 
William H. Stevenson
NMFS Skylab Principal Investigator

Subject: Field Activity Reports

To insure detailed documentation of the August 4-5 field operations all personnel carrying out field activities will prepare field activity reports. Preparation of the reports should be given serious consideration by all personnel prior to implementation of field activities. This will insure appropriate notes and records will be kept to effectively meet this report requirement. The field activity reports will be due in the office of the Fisheries Engineering Laboratory by close of business August 9, 1973.

Each report should identify the specific activity, the name of the individual completing the report, and the principal personnel participating in the activity. The report should reflect the general status of the specific activity for which the person is responsible as it was performed. You may want to include a comparison between "as performed" and "as planned" effort. The third area to be covered in the report is "Special Situations". Each person is asked to document any unique or special conditions which may have taken place and could have a bearing on the interpretation of the data acquired during the activity or in the planning of future activities of a similar nature. Special situations should include, but not be limited to, the following areas:

- a. Cooperation of the vessel owners or other non-Government personnel participating in the activity
- b. Performance of equipment and availability of supplies to carry out assigned activities
- c. Unusual conditions which may have taken place and were not included in the project plan
- d. Observations that were missed
- e. Additional observations taken besides the planned observations

- f. Other informal observations which could include changes in water conditions, changes in availability of fish, or changes in weather conditions.

It is requested that special situation reporting should reflect the location at which the event took place by specific geographic location when possible and appropriate.

A progress report will be required from the three personnel assigned to the trailers. These reports must be called into FEL by noon on July 27 and called into the Field Center, Destin, Florida, on August 3 by 1800 hours.

I want to remind all personnel that there is a Federal regulation prohibiting consumption of alcoholic beverages on Government property. For purposes of this investigation, charter vessels and equipment rented, such as trailers, for Government use are considered Government property. This regulation precludes the consumption of alcoholic beverages by all personnel on, in, or around chartered vessels, rented equipment or Government facilities.

The success of this project will depend upon the full support and professional attitude of every person participating. The project will be under careful scrutiny by members of the press and the sports fishing public. Our success will depend upon the accuracy of the data acquired by each of you, and the value of the data will be only as good as the effort made. I know I can count on the full cooperation of each of you.



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
EARTH RESOURCES LABORATORY
MISSISSIPPI TEST FACILITY
BAY ST., LOUIS, MISSISSIPPI 39523

REPLY TO
ATTN OF GD

July 6, 1973

Department of Transportation
U.S. Coast Guard
Attn: John McCubbin, Rear Admiral
Commander, Eighth Coast Guard District
Customhouse, New Orleans, LA 70130

Subject: Item for Local Notice to Mariners

Request that the following notice be published in the Local Notice to Mariners.

The National Aeronautics and Space Administration (NASA) in cooperation with the National Marine Fisheries Service on August 4 and 5, 1973, between the hours of 0900 and 1800 will be conducting a scientific data acquisition operation with nine boats in an area 55 miles south of Destin, Florida. The test site is a triangular area bounded by coordinates 30°16'N, 86°51'W; 29°18'N, 85°47'W; 29°21'N, 87°56'W and encompasses a total area of 3,200 square nautical miles.

Between the hours of 1130 and 1430 brilliant orange smoke flares will be deployed as an aid to aircraft navigation and is not to be construed as an emergency requirement.

The NASA Boat "The ERL" located at 29°34.5'N, 86°56.75'W will operate a radio beacon 363 KHz I.D. code NAS between the hours of 1100 and 1430, this is to be used as a homing device for the NASA Aircraft. Mariners are requested to navigate the area with caution in such a manner so as not to endanger themselves or to interfere with the participants of the exercises.


R.O. Piland
Director, ERL

cc:
NMFS/G. Woods

GD/ADPERESICH:bp, 7-6-73

INSTRUCTIONS FOR COMPLETING GAMEFISH BOAT LOG

<u>Front Page</u>	<u>Parameter Description</u>
1. Boat Name	- Registered Name of Boat.
2. Captain	- First and Last Name.
3. Date	- Day/Month/Year
4. Reference No.	- Reference numbers for the oceanic gamefish entries on that particular log. Must be entered in location of square (located on the bottom of form) where the fish were caught.
5. Oceanic Gamefish	- Common name of oceanic gamefish; raised or hooked.
6. Time	- Time in hours and minutes. <ul style="list-style-type: none">● Local time gamefish raised.● Local time gamefish hooked.● Local time gamefish lost.● Local time gamefish boated.
NOTE: If gamefish is hooked, a time must be filled out in "Lost" or "Boated" Column.	
7. Bait	- Bait used. (Mullet, Ballyhoo, Strip, Artificial, Other).
8. Water Color	- Visual color of water (blue, blue-green, green, dirty).
9. Water Type	- <ul style="list-style-type: none">● Rip● Open water● Scattered grass (no rip)● Debris (logs and grass, no rip)
10. Square No.	- Square fished.
NOTE: More than one square may be fished. The form will accommodate up to four squares. Additional log(s) must be filled out if this is exceeded. This parameter must be entered in column to acquire fishing pressure information for each square fished and in blank below squares on form which are used to identify catch location, using reference number(s).	
11. Lines In	- Fishing start time in hours and minutes for the designated square. (Must have entry for each square fished.)

12. Lines Out - Fishing stop time in hours and minutes for the designated square. (Must have entry for each square fished.)
13. No. Rods Fished - Number of rods fished. (Must have entry for each square fished.)
14. Rod Hours Fished/
Bait - Number of rod hours to tenths of an hour fished with each of the five baits (Mullet, Ballyhoo, Strip, Artificial, and Other) in each square.

Back Page

Parameter Description

15. Billfish Species - Common name of billfish. Entry must be made for each billfish which is logged (hooked) on front page.
16. Time Hooked - Local time in hours and minutes which must correspond exactly with time hooked which is logged on front sheet. This is used by the computer to correlate entries on the front sheet with entries on the back sheet.
17. Girth - Girth of billfish entered in centimeters (to tenths, if possible).
18. Sex - Sex of billfish (Male, female, or undetermined).
19. Weight - Weight of billfish entered in pounds and ounces.
20. Length -
o Length of billfish - lower jaw to fork in centimeters (to tenths, if possible).
o Length of billfish - orbit to fork in centimeters (to tenths, if possible).
21. Billfish Seen - Yes or No. (If "Yes", time, species and Square No.)

NOTE: If more than two entries are needed on a given log, just add additional lines under the above column heading.

22. Gamefish - Common names of some gamefish are listed on form, along with blank entries, should additional gamefish types be caught. This entry should be filled out for each oceanic gamefish (other than billfish) recorded on the front page.
23. Number Caught - Number of gamefish caught during a fixed time period. Example: 20 school dolphin. Single fish should be entered if they are large enough to meet tournament regulations. Weight and length (in units cited above) for such fish should be placed in Comments Column.
24. Time Caught - Local time gamefish is caught in hours and minutes. Must match time hooked on front sheet for computer correlation.
25. Comments - Any comments with regard to fish or environment, etc.
26. Remarks - Any remarks that fishermen feel are important. Example: Observation of whales.

MTF TECHNICAL WORK REQUEST	1. WORK REQUEST IDENTIFICATION NUMBERS															
	CWC USE		REQUESTOR'S USE ONLY						PERFORMING ACTIVITY USE ONLY							
	WORK REQUEST NUMBER															
	CONTRIB. CODE		BENEFITOR CODE		WORK REQUEST SERIAL NUMBER				REVISION NO.		SUB-WORK ORDER NUMBER			SUB-WORK REQUESTER CODE		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
			M F	3	D	0	4	0								

2. REQUESTED BY: <i>E. G. Woods</i> E. G. Woods	OFFICE	TELEPHONE	3. PROGRAM	ERTS-A
Bldg 1100, Rm B350	3650		3-A PROJECT	Skylab Project Experiment

4. RELEASED BY: <i>E. G. Woods</i> E. G. Woods	OFFICE	TELEPHONE	5. DATE RELEASED	6. REQUIRED DELIVERY OR COMPLETION DATE
Bldg 1100, Rm B350	3650		7/3/73	7/3/73 - 8/15/73

7. WORK REQUEST TITLE
Skylab Fishing Tournament Planning and Logistics Support

8. DESCRIPTION OF WORK REQUESTED

Provide the NMFS/FEL with artwork and printing support for preparing for the Skylab Experiment #240 to be held at Pensacola, Destin, and Panama City, Florida, on August 4, and 5, 1973.

Contact the above for details.

9. PERFORMING ACTIVITY USE ONLY					10. APPROVALS:		
9-A ESTIMATED	MANHOURS	MATERIALS	START DATE	COMPL. DATE	BENEFITOR APPROVAL TO PROCEED: 10-A	DATE	
9-B ACTUAL					10-B		
12. REMARKS:					COMPLETED BY 10-C	DATE	
					COMPLETION APPROVED 10-D	DATE	
					11 DATES RECEIVED	11-A WORK CONTROL	11-B PERFORM. S.
13. TOTAL COST	13-A ESTIMATED	\$ _____	13-B ACTUAL	\$ _____			

MTF TECHNICAL WORK REQUEST	1. WORK REQUEST IDENTIFICATION NUMBERS													
	CWC USE		REQUESTOR'S USE ONLY								PERFORMING ACTIVITY USE ONLY			
	WORK REQUEST NUMBER													
	CONTRIB. CODE		BENEFITOR CODE		WORK REQUEST SERIAL NUMBER				REVISION NO.	SUB-WORK ORDER NUMBER			SUB-WORK REQUESTER CODE	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		M	F	3	D	0	3	0						

2. REQUESTED BY: OFFICE <i>E.G. Woods</i> E.G. Woods Bldg. 1100, Rm. B305	TELEPHONE 3650	3. PROGRAM ERTS-A 3-A PROJECT Skylab Project Experiment
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4. RELEASED BY: OFFICE <i>E.G. Woods</i> E.G. Woods Bldg. 1100, Rm. B305	TELEPHONE 3650	5. DATE RELEASED 7/2/73	6. REQUIRED DELIVERY OR COMPLETION DATE 7/2/73 - 8/15/73
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7. WORK REQUEST TITLE
 Skylab Fishing Tournament Planning and Logistics Support

8. DESCRIPTION OF WORK REQUESTED

Provide the NMFS/FEL with planning and logistics support for preparing for the Skylab Experiment #240 to be held at Pensacola, Destin and Panama City, Florida on August 4, 5, 1973.

Contact the above for details.

9. PERFORMING ACTIVITY USE ONLY					10. APPROVALS:	
9-A ESTIMATED	MANHOURS	MATERIALS	START DATE	COMPL. DATE	BENEFITOR APPROVAL TO PROCEED: 10-A	DATE
9-B ACTUAL					10-B	
12. REMARKS:					COMPLETED BY 10-C	DATE
					COMPLETION APPROVED 10-D	DATE

13. TOTAL COST	13-A ESTIMATED \$ _____ 13-B ACTUAL \$ _____	11 DATES RECEIVED	11-A WORK CONTROL	11-B PERFORM. SHOT
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INSTRUCTIONS FOR HANDLING GAMEFISH
ABOARD THE R/V OREGON II

1. Background

Anglers who will participate in the Skylab Gamefish Tournament have been notified that the R/V OREGON II will be available on 4 August to take on fish and provide cooler storage if desired. The vessel will occupy Station 53 beginning at 1930 on 4 August. For this purpose Station 53 coordinates are 29°30.0'N and 86°57.5'W.

2. Storage Requirements

The R/V OREGON II will provide a cooler storage compartment for the purpose of stowing the fish. It is required that the compartment be maintained at a temperature range of 32°F to 36°F.

3. Fish Identification

In order to provide a means of identifying ownership of any stored fish, an I.D. tag per fish system will be used. Anglers were informed to provide their own tags and materials for this purpose. However, it is anticipated that some anglers may not be able to comply with this procedure. If this situation should arise, NMFS personnel aboard the R/V OREGON II will provide tags and attachment materials. Tagging materials will be provided to OREGON II personnel on 27 July while the vessel is in port at Pascagoula, Mississippi.

4. Tagging Procedure

Fish will be brought aboard the OREGON II if sea conditions permit at Station 53 - decision to be made by OREGON II Captain. Each fish brought aboard will be immediately tagged, and then transferred to the cooler. If the fish has been tagged prior to being transferred to the OREGON II, NMFS personnel will inspect the tag for proper identification, labeling and tag durability. The fish should be re-tagged if it is estimated that these requirements have not been met. Tags will bear the following minimum information: angler name, boat name, type of fish, date/time caught, and number of square fish caught in. Past experience indicates that tagging information be printed with a soft lead pencil for legibility and durability. Completed tags will be tied, with a cord or wire at the junction of the tail and main fish body. Fish are then to be transferred to the onboard cooler.

5. Fish Reclaiming Procedure

Each angler transferring fish to the OREGON II will be informed by OREGON II personnel that if his fish are not claimed by 1700 hours on August 5, they will be transferred to the dock at Capt. Anderson's Marina, Panama City for weigh-in. Anglers will be

able to reclaim their fish between the hours of 2400 on 5 August and 0500 on 6 August if they so desire. Any fish remaining on the dock after 0600 on 6 August will be disposed of under the direction of Capt. B. J. Putnam, Panama City Charter Boat Association Tournament Committee Representative.

6. Onshore Fish Transport

A vehicle and personnel will be at the NCSL dock, Panama City, to meet the R/V OREGON II when she arrives in port to handle offloading and transport of the fish as well as all oceanographic samples. Fish will then be transported to Capt. Anderson's Marina. Oceanographic samples will be transported to the Panama City trailer.

A X B T AND DROP SONDES DEPLOYMENT

DATE: August 5, 1973
 LOCATION: Skylab EREP #240 Test Area (Attached Maps A & B).
 AIRCRAFT: Navy NP3A
 DEPLOYMENT: (1) A X B T - Seven to be deployed.

<u>COORDINATES - (Plan A)</u>	<u>COORDINATES - (Plan B)</u>	<u>A X B T NO.</u>
29°40.0'N, 86°58.0'W	29°29.0'N, 86°46.0'W	A
30°03.5'N, 87°04.0'W	29°53.0'N, 86°52.5'W	B
29°55.0'N, 86°35.4'W	29°44.0'N, 86°22.5'W	C
29°27.5'N, 86°25.0'W	29°16.5'N, 86°13.5'W	D
29°08.0'N, 86°44.5'W	28°55.5'N, 86°33.0'W	E
29°23.0'N, 87°26.0'W	29°12.0'N, 87°15.0'W	F
29°49.0'N, 87°26.5'W	29°38.0'N, 87°15.0'W	G

TIME: 0800 CDT to 1100 CDT

ALTITUDE: 2000 feet

(2) DROPSONDES: Four to be deployed.

<u>COORDINATES - (Plan A)</u>	<u>COORDINATES - (Plan B)</u>	<u>DROPSONDES NO.</u>
29°55.0'N, 87°25.0'W	29°43.5'N, 87°13.5'W	1
29°44.4'N, 86°15.5'W	29°33.0'N, 86°03.5'W	2
29°14.5'N, 86°27.0'W	29°02.5'N, 86°16.0'W	3
29°23.0'N, 87°36.0'W	29°12.5'N, 87°25.0'W	4

Time: Launch Dropsondes No. 3 at 1130 CDT
 Launch Dropsondes No. 4 at 1200 CDT
 Launch Dropsondes No. 1 at 1230 CDT
 Launch Dropsondes No. 2 at 1300 CDT

ALTITUDE: 15,000 feet

ORDER OF DROP: As specified under time

COMMUNICATIONS: The NP3A shall notify the E-18 Beech before each dropsonde is launched. If the E-18 Beech is not contacted, DO NOT LAUNCH THE DROPESONDE.

COMMUNICATIONS: (1) E-18 Beech call sign 3616B - ERL I
 (2) Aircraft to Aircraft
 122.9 mc-prime
 6.9825 mc upper sideband-backup

- (3) Aircraft to Destin Command Center - ERL - Destin
6.9825 mc upper sideband
- (4) Notify Destin Command Center
Start and stop times of A X B T drops and Launch
Times of each Dropsonde.
- (5) Destin Command Center
Phone Numbers:
904/837-2613
904/837-2533

PLAN A & B: The decision will be made at 1900 CDT, August 3 and 4, 1973, on which plan will be used on the following day (Plan A or B). Phone Destin Command Center after 1900, August 3, 1973, to determine which plan is to be used.

TOURNAMENT: The Gamefish Tournament will be for two days - August 4 and 5, 1973.

OTHER AIRCRAFT: E-18 Beech - Will fly the three flight lines (map attached) at 10,000 feet on August 4 and 5, 1973. The order will be Flight Line 1 first; Flight Line 2 second; and Flight Line 3 third, in the direction indicated on the attached map. Beech will be over Station 841 or 41 on Flight Line 1 at approximately 1200 CDT.

C-130B ---- Will fly the same Flight Lines as the Beech at 20,000 feet on August 5, 1973. The flight line order and the time has not been determined.

VESSELS: Fishing and Oceanographic - There will be 50 to 60 vessels in the Test Area during this experiment.

APPENDIX L

NC130B
OPERATIONS
PLAN

APPENDIX L

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
HOUSTON, TEXAS

EARTH OBSERVATIONS AIRCRAFT PROGRAM
PROJECT SUPPORT PLAN
FOR
EREP PROJECT S240

APPLICATION OF REMOTE SENSING
FOR FISHERY RESOURCE ASSESSMENT
AND MONITORING

G. Hrabal *G. Hrabal*
Prepared By: Aircraft Project Manager

C. Harlan *Charles S. Harlan*
Approved By: Chief, Aircraft Applications Branch

for E. Kranz *Charles S. Harlan*
Approved By: Chief, Flight Control Division

O. Smistad *O. Smistad 5-10-73*
Concurrence By: Earth Resources Program Office

for T. Kloves *Victor L. Ettus 5-9-73*
Concurrence By: Principal Investigations Management Office

1.0 PROJECT DESCRIPTION	PROJECT NUMBER EREP S240																		
APPLICATION DISCIPLINE Oceanography																			
<p>1.1 PROJECT OBJECTIVE</p> <p>The project objective is to establish the feasibility of utilizing satellite remote sensing data to assess and monitor the distribution of gamefish for commercial and/or recreational utilization and management. Satellite, aircraft, and surface vessels will collect simultaneous data during selected Skylab orbital passes in the northern Gulf of Mexico south of Pensacola, Florida.</p> <p>The aircraft flight data will be used in the analysis and evaluation of the EREP sensors. The aircraft underflight data in conjunction with the sea truth data will form the basis for evaluation of the EREP remotely sensed data. It will also be used along with the surface measurements to continue development of remote sensing techniques to characterize marine waters and, furthermore, to relate these measurements to fisheries resources.</p>																			
<p>1.2 HISTORY AND RELATIONSHIPS TO OTHER INVESTIGATIONS</p> <p>The NASA Earth Resources Laboratory and the NOAA National Marine Fishery Service have an ongoing research program in this area. Previous NASA Earth Survey Program aircraft overflights over portions of this test area were conducted on Mission 107 (August 1969), Mission 110 (August 1969), Mission 150 (August 1970), Mission 182 (July 1971), Mission 190 (November 1971), Mission 192 (January 1972), Mission 199 (May 1972), Mission 206 (June 1972), Mission 210 (August 1972), and Mission 215 (September 1972).</p>																			
<p>1.3 PROJECT REQUIREMENTS</p> <p>This project requires two medium-altitude aircraft overflights, one each during the Skylab 2 and 3 missions. The area to be overflown will be selected to coincide with orbital coverage from Skylab 2 and 3. The flight line arrangement generally will be as indicated on the flight line map, but may shift if the Skylab orbital track location changes.</p>																			
<p>1.4 PERSONNEL</p> <table border="1"> <thead> <tr> <th data-bbox="300 1415 544 1442">FUNCTION AND NAME</th> <th data-bbox="730 1415 1063 1442">AFFILIATION AND ADDRESS</th> <th data-bbox="1299 1415 1437 1442">TELEPHONE</th> </tr> </thead> <tbody> <tr> <td data-bbox="267 1464 625 1521">Principal Investigator: W. H. Stevenson</td> <td data-bbox="690 1464 1088 1585">NOAA NMFS Mississippi Test Facility Earth Resources Laboratory Bay St. Louis, MS 39520</td> <td data-bbox="1218 1464 1510 1521">Office: direct FTS 601-688-3650</td> </tr> <tr> <td data-bbox="267 1606 511 1664">Co-Investigator: J. W. Weldon</td> <td data-bbox="690 1606 941 1634">NASA ERL/Code GC</td> <td data-bbox="1218 1606 1502 1685">Office: direct FTS 601-688-4256 Home: 504-643-7046</td> </tr> <tr> <td data-bbox="267 1713 544 1770">Technical Monitor: L. Tilton</td> <td data-bbox="690 1713 941 1740">NASA ERL/Code GC</td> <td data-bbox="1218 1713 1510 1770">Office: direct FTS 601-688-3086</td> </tr> <tr> <td data-bbox="267 1787 446 1844">PIMO: Z. H. Byrns</td> <td data-bbox="690 1787 958 1815">NASA JSC/Code TF6</td> <td data-bbox="1218 1787 1404 1844">Office: 713-483-2526</td> </tr> <tr> <td data-bbox="267 1862 641 1919">Aircraft Project Manager G. C. Hrabal</td> <td data-bbox="690 1862 958 1889">NASA JSC/Code FC2</td> <td data-bbox="1218 1862 1404 1919">Office: 713-483-6308</td> </tr> </tbody> </table>		FUNCTION AND NAME	AFFILIATION AND ADDRESS	TELEPHONE	Principal Investigator: W. H. Stevenson	NOAA NMFS Mississippi Test Facility Earth Resources Laboratory Bay St. Louis, MS 39520	Office: direct FTS 601-688-3650	Co-Investigator: J. W. Weldon	NASA ERL/Code GC	Office: direct FTS 601-688-4256 Home: 504-643-7046	Technical Monitor: L. Tilton	NASA ERL/Code GC	Office: direct FTS 601-688-3086	PIMO: Z. H. Byrns	NASA JSC/Code TF6	Office: 713-483-2526	Aircraft Project Manager G. C. Hrabal	NASA JSC/Code FC2	Office: 713-483-6308
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2.0 OPERATIONAL REQUIREMENTS

PROJECT NUMBER EREP S240

2.1 Additional requirements and constraints to include preflight/postflight notification and ground truth/air-ground conditions as listed below:

CLOUD COVER: 30 percent or less

SUN ANGLE: Aircraft overflight will coincide with the Skylab orbital data pass, if possible

ALTITUDE (MAX-MIN): 20 000 feet (abs) (D)

15 000 feet (abs) minimum (M)

COMMUNICATIONS: Air-to-ship communication is required to notify sea truth team of each flight line start and stop. Frequency is 6.9825 MHz USB. Call signs: NC130B is NASA 929, ship is ERL BASE.

ONBOARD OBSERVERS: If possible, an ERL representative will be onboard the aircraft to assist in locating the flight lines (D).

GROUND TRUTH: Will be taken by ships and small aircraft from ERL and NOAA.

A flight line marker ship will be stationed at the cross point of flight Lines 1, 2, and 3. It is desired that the aircraft overfly this ship on each flight line. Information on how to identify this ship will be supplied at a later date. Depending upon the actual Skylab orbital track, flight Lines 1 through 3 may, or may not, be shifted from the position shown so as to remain under the orbital track.

If possible, the three aircraft flight lines should be flown in numerical order (1, 2, and 3).

If the Skylab orbital pass occurs at a favorable time of day when sunglint is not a problem, the aircraft should plan the data overflight so as to be at the flight line intersection point at the time of the Skylab passage.

If the Skylab orbital pass occurs at a time when sunglint could be a problem, the time of the aircraft overflight may be altered to achieve more favorable data results.

Close coordination between the aircraft Mission Manager and the Co-PI must be maintained in order that there be sufficient time to deploy the sea truth team a minimum of 24 hours prior to the aircraft/Skylab data flights. The sea truth team will collect data one day prior, during, and one day after the aircraft/Skylab data flights. Arrangements should be made to notify the Co-PI of a firm time when the aircraft will be airborne and the ETA at the test site area. If the Skylab data pass must be cancelled prior to the aircraft becoming airborne and the weather conditions are acceptable, the PI will decide if the sea truth team and the aircraft should continue on to collect data.

Optimize all instruments for enhancement of water data return on flight Lines 1 through 3.

2.0 OPERATIONAL REQUIREMENTS - (Concluded)

PROJECT NUMBER EREP S240

If possible, the aircraft ground speed should be held constant on flight Lines 1 through 3 to minimize track scale changes in the data.

The N130B aircraft is required for this project because the MSS is a mandatory sensor.

The aircraft must obtain clearances for the restricted areas and the ADIZ that are within the expected data collection area. Flight line 4 is to be flown at 2000-foot altitude over the ERL parking lot where photographic reference panels will be displayed.

2.2 PROJECT FLIGHT REQUIREMENTS SUMMARY											PROJECT NUMBER EREP S240									
AIRCRAFT TEST SITE NO. AND NAME AND EREP TASK/SITE NO.	SECTOR	DATA FLT	FLT M-D	FLT PRIORITY	OPS PRIORITY	NO. OF FLT	DATA MILES PER FLT	SENSORS							ALT (ABS) K FEET	FLIGHT TIMING				POTENTIAL AIRCRAFT
								METRIC	HASS	AMPS	MSS	PRT-5	RECON IV	ENVIRON		SPACECRAFT MISSION	TIME TOL +1	REQUESTED FLIGHT DATES	SUN ANGLE	
198 - Northern Gulf of Mexico /478500	6 & 0	1	M	2	M	1	220	1	4		X	X			15.0	2	One day	SL2	(a)	NC130B
					D		220	1	4		X	X	X	X	20.0	2	Same day	SL2	(a)	NC130B
	6 & 0	2	M	1	M	1	220	1		4	X	X			15.0	3	One day	SL3	(a)	NC130B
					D		220	1		4	X	X	X	X	20.0	3	Same day	SL3	(a)	NC130B
						M														
						D														
						M														
						D														
						M														
						D														
						M														
						D														
						M														
						D														

NOTES: ^aThe aircraft overflight will coincide with a Skylab orbital data pass, if possible. If the Skylab pass time creates a sunglint problem, the aircraft flight time may be adjusted to minimize sunglint.

2.3 SENSOR SYSTEMS CONFIGURATION REQUIREMENTS											PROJECT NUMBER EREP S240		
DATA FLT	PHOTOGRAPHIC SYSTEMS										ELECTRONIC SYSTEMS		
	PRIORITY	CAMERA	POSITION	FILM		(a) FILTER	LENS	FWD LAP	SIDELAP	INV (SEC)	PRIORITY	SENSOR	SPECIFICATIONS
				TYPE	NO.								
1	M	RC8 ^b	1	Color IR	2443	(TBD)	6 in.	15	-		M	MSS	Channels 2 to 7 (any 2-M) Channels 8 to 10 (D) Channels 20 to 22 (D) Record the best of channels 4, 5, or 6 on onboard film
	M	Hass	1	Color	S0397	Haze	40 mm	15	-				
	M	Hass	2	B&W	2402	47B + 2A	40 mm	15	-				
	M	Hass	3	B&W	2402	57+12	40 mm	15	-				
	M	Hass	4	B&W	2402	25	40 mm	15	-				
2	M	RC8 ^b	1	Color IR	2443	(TBD)	6 in.	15	-		M	MSS	Channels 2 to 7 (any 2-M) Channels 8 to 10 (D) Channels 20 to 22 (D) Record the best of channels 4, 5, or 6 on onboard film
	M	AMPS	1	B&W IR	2424	CC	6 in.	15	-				
	M	AMPS	4	B&W	S0022	GG	6 in.	15	-				
	M	AMPS	5	B&W	S0022	BB	6 in.	15	-				
	M	AMPS	6	B&W	S0022	AA	6 in.	15	-				
	M	PRT-5											

NOTES:

^aNASA JSC PTD to determine optimum filtration for color and color IR films based on tests of the actual film emulsion to be used for this project.

^bRC8 color IR film to be overexposed one additional f-stop over a normal water exposure.

Metric Camera With Color IR Film (Mandatory):

Required to provide cloud cover data for the infrared sensors, sea state assessment, location and identification of sea truth vessels, location of water color delineations, and possible location of fish schools. This film should be over-exposed one additional f-stop over a normal water exposure to provide better water color delineation.

Multiband Cameras - Hasselblad and AMPS (Mandatory):

Required to provide selected spectral band data in the visible and infrared regions for water color differentiations, chlorophyll absorption studies, turbidity and settlement data, and to support and verify Skylab multiband data.

Multispectral Scanner (Mandatory):

Required to provide selected spectral band data for water color differentiation studies, and to support and verify Skylab multispectral data for spectral variability analysis. Any two of channels 2 to 7 (visible region) are mandatory. Channels 8 to 10 and 20 to 22 are desirable. Record the best of channels 4, 5, or 6 on onboard film.

PRT-5 (Mandatory):

Required to provide water surface temperature measurements, atmospheric correction and correlation data, and correlation with sea truth temperature measurements.

Recon IV Infrared Scanner (Desirable):

Required to provide water temperature and turbidity pattern data to correlate MSS and Skylab thermal region data.

Environmental Sensors - Total Air Temperature, Liquid Water Content, and Hygrometer (Desirable):

Required to provide data for atmospheric correction and correlation calculations for other sensors.

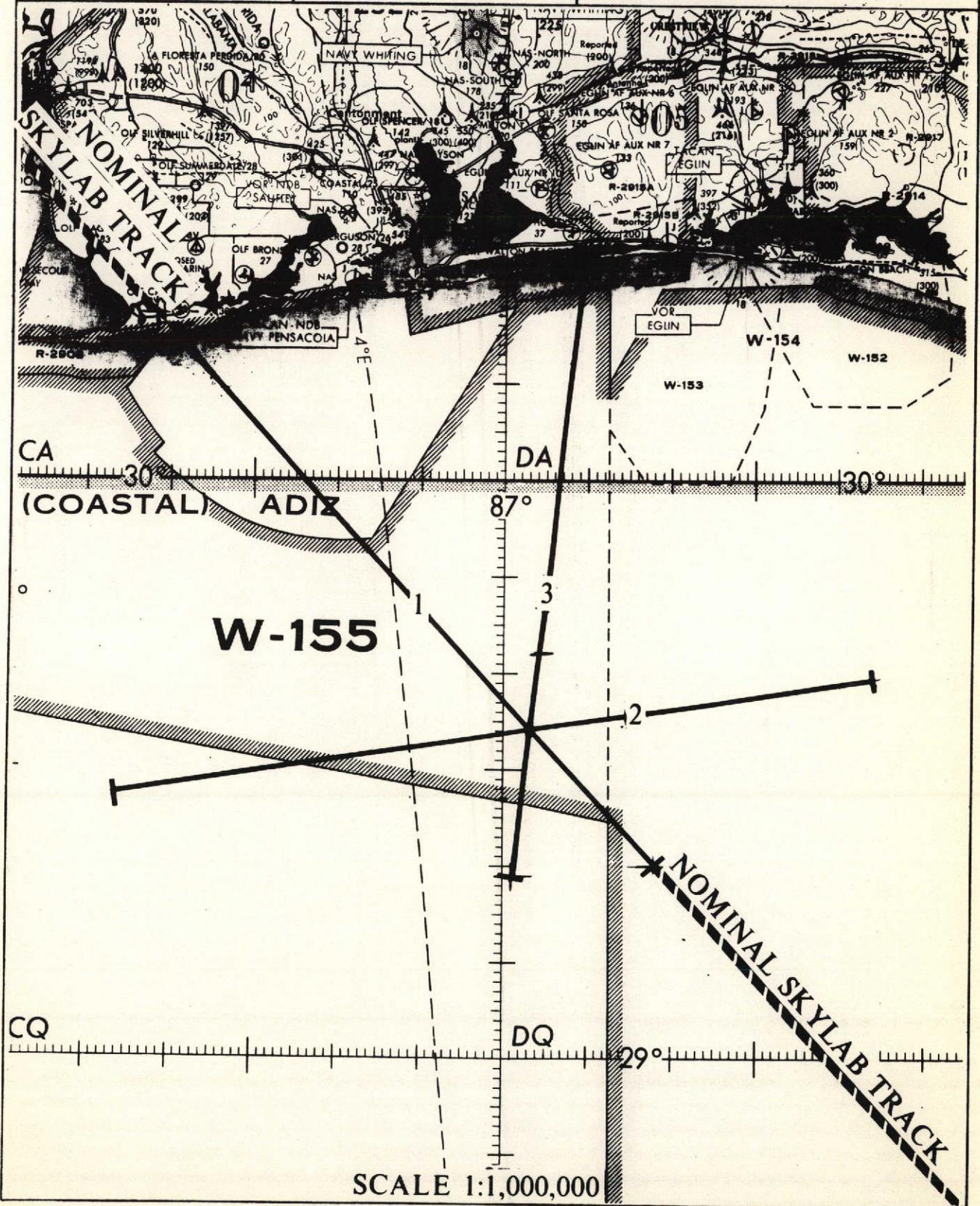
Note: Sea truth will be obtained by the NASA Earth Resources Laboratory and the NOAA National Marine Fishery Service teams.

2.5 FLIGHT LINE INSTRUMENTATION SUMMARY											PROJECT NUMBER EREP S240						
TEST SITE 198 - Northern Gulf of Mexico						RC8-1 (d) COLOR IR	MB-1 (a)	MB-2 (a)	MB-3 (a)	MB-4 (a)	MSS	PRT-5	RECON IV	TAT	LWC	HYGROMETER	
DATA FLIGHT 1 and 2			AIRCRAFT NC130B														
LINE	RUN	RUN TIME	ALT (K FT)		LINE N. MI.												
			MSL	ABS													
^b 1	1	19	20.0	20.0	74	M	M	M	M	M	M	M	D	D	D	D	
2	1	20	20.0	20.0	80	M	M	M	M	M	M	M	D	D	D	D	
^c 3	1	17	20.0	20.0	65	M	M	M	M	M	M	M	D	D	D	D	
4	1	1	2.0	2.0	1	M	M	M	M	M	M	M	D	D	D	D	
Total 57 min.			Total 220 n. mi.														
Estimated aircraft flight times:																	
Data runs: 1.0 hr (based on 240 and 150 knots ground speed)																	
Two long turns: 0.4 hr (from Line 1 to 2 and 2 to 3)																	
Transit to MTF: 0.6 hr (based on 140 n. mi. at 240 knots)																	
Grand total: 2.0 hr																	
NOTES:																	
^a For Flight 1: operate Hasselblad camera. For Flight 2: operate AMPS camera.											<u>LEGEND</u> M = Mandatory D = Desirable						
^b Flight line 1 to include beach at start of line.																	
^c Flight line 3 to include beach at end of line.																	
^d Overexpose one additional f-stop over a normal water exposure.																	

2.6 TEST SITE MAP

TEST SITE 198

PROJECT NUMBER EREP S240



2.7 FLIGHT LINE COORDINATES	TEST SITE 198	PROJECT NUMBER EREP S240
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TYPICAL FLIGHT LINE POSITIONS BASED ON NOMINAL SKYLAB ORBITAL TRACK
(Lines 1, 2, and 3 subject to change)

<u>Line</u>	<u>Start</u>	<u>Finish</u>	<u>Line Length (n. mi.)</u>
1	30°15.0'N 87°39.5'W	29°20.0'N 86°42.0'W	74
2	29°39.0'N 86°16.0'W	29°27.5'N 87°46.0'W	80
3	29°19.0'N 86°59.0'W	30°24.0'N 86°50.5'W	65
4	30°22.0'N 89°35.8'W	30°23.0'N 89°35.8'W	1

3.0 DATA PROCESSING AND DISSEMINATION PLAN						PROJECT NUMBER EREP S240														
3.1 PHOTOGRAPHIC AND OTHER DATA PROCESSING AND DISSEMINATION INSTRUCTIONS																				
		REQUIRED	PORD PROCESSING	SENSI-PLOTS	ADAS CORRELATION	ENHANCEMENT	SPECTRAL CURVES	DPT	DNT	PRINTS B/W	PRINTS COLOR	ENLARGEMENTS (2x)	REMARKS	A/C PROJECT MGR	PI	REDAF	EROS			
RC8		1	X	X	X			2									1	1		
		2																		
KA62		1																		
		2																		
		3																		
		4																		
HASSELBLADS <input checked="" type="checkbox"/>		BANK 1	1	X	X	X		2									1	1		
			2	X	X	X		2									1	1		
(a)			3	X	X	X		2									1	1		
AMPS <input checked="" type="checkbox"/>		BANK 2	4	X	X	X		2									1	1		
			5																	
			6																	
ZEISS		1																		
		2																		
HI-RES																				
BORESIGHT	IR PALLET																			
	MFMR																			
	SCATT																			
	LASER																			
	FSS																			
	QUICK LOOK																			
MISSION FLIGHT LOGS		4															1	1	1	1
AS-FLOWN FLT MAPS		2																1	1	
CAMERA COREL RPT		1															1			
G&N TABS		1															1			
G&N PLOTS																				
NOTES:																				
EROS to receive one set of duplicate positive imagery, mission logs, and as flown flight maps.																				
^a For flight 1: operate Hasselblad cameras. For flight 2: operate AMPS camera.																				

3.2 ELECTRONIC DATA PROCESSING AND DISSEMINATION INSTRUCTIONS

PROJECT NUMBER EREP S240

	STRIP CHARTS	PLOTS	TABS	TAPES	FILM		REMARKS			PI
					ONBOARD	TAPE/ FILM				
MSS				(a)	DPT		ERL to process flight tape			1
RS-7										
RS-14										
RECON IV				A101-1	DPT	70 mm A105-2				1
RADIOMETER										
SPECTROMETER										
PMIS										
RADSCATT										
LASER										
MFMR										
PRT-5			A092-1	A091-1			Tab to be 1 sample per 10 seconds. Tape to be 7 tracks of plotted and tabbed data			1
ADAS			A022-1							1
ENVIRON.				A031-1			Desire 1/2 in., 7-track, 800 bpi tape			1

NOTES: EROS to receive one set of all imagery.
^aERL to receive original MSS flight tape.

71-1

